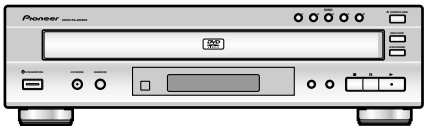
Service Manual



ORDER NO.
RRV2297

DVD PLAYER
DV-C503

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Region No.	Remarks
	DV-C503			
KUXQ	◯	AC120V	1	
KCXQ	◯	AC120V	1	
RDXQ1/RA	◯	AC110-127 / 220-240V	1	
RDXQ/RD	◯	AC110-127 / 220-240V	4	

CONTENTS

1. SAFETY INFORMATION ····· 2
2. EXPLODED VIEWS AND PARTS LIST ····· 3
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM ··· 10
4. PCB CONNECTION DIAGRAM ····· 31
5. PCB PARTS LIST ····· 44
6. ADJUSTMENT ····· 48
7. GENERAL INFORMATION ····· 49
7.1 DIAGNOSIS ····· 49
7.1.1 SELF-DIAGNOSTIC FUNCTION OF PICKUP DEFECTIVE ····· 49
7.1.2 TEST POINTS LOCATION ····· 50
7.1.3 TEST MODE SCREEN DISPLAY ····· 51
7.1.4 ERROR CODE ····· 55
7.1.5 DISASSEMBLY ····· 59
7.1.6 TROUBLE SHOOTING FOR MECHANISM SECTION ····· 71
7.1.7 TROUBLE SHOOTING FOR ELECTRICAL SECTION ····· 74
7.2 PARTS ····· 75
7.2.1 IC ····· 75
7.2.2 FL DISPLAY ····· 88
8. PANEL FACILITIES AND SPECIFICATIONS ···· 89

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE, INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

T – IZE JULY 2000 Printed in Japan

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

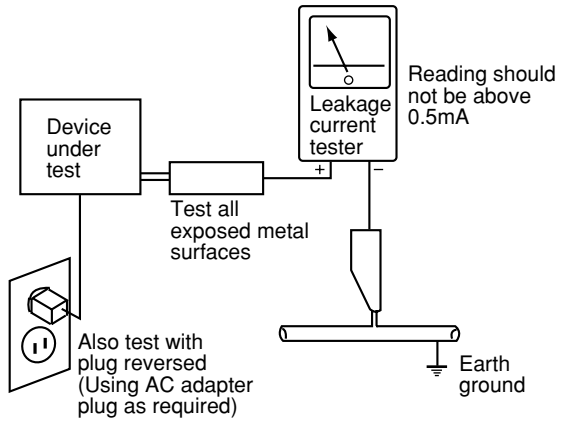
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

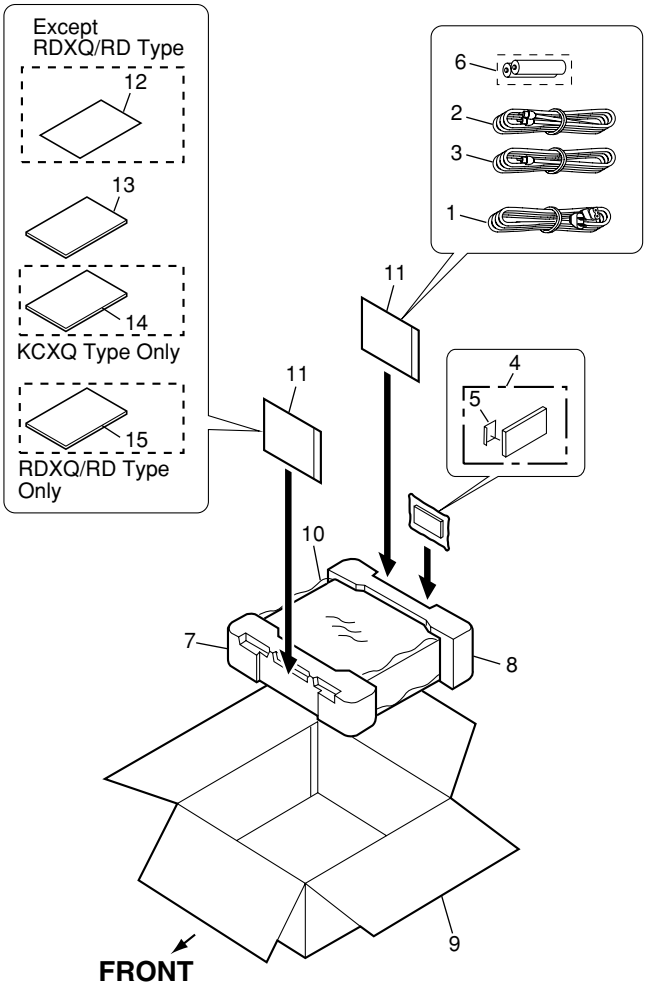
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *Screws adjacent to ▼ mark on the product are used for disassembly.*

2.1 PACKING



(1) PACKING PARTS LIST

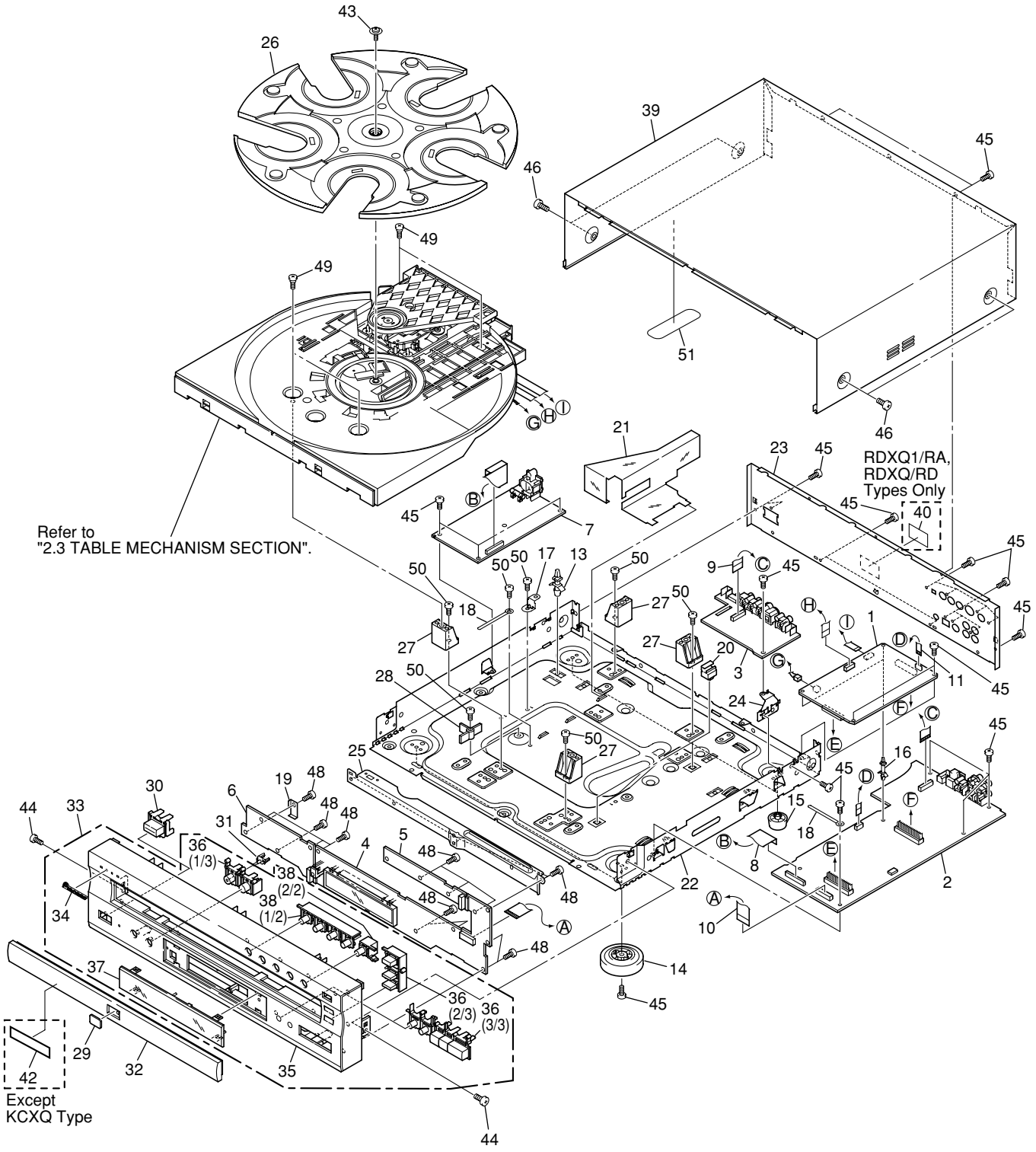
Mark	No.	Description	Part No.
⚠	1	Power Cord	See Contrast table (2)
	2	Audio Cord (L = 1.5m)	VDE1054
	3	Video Cord (L = 1.5m)	VDE1055
	4	Remote Control Unit	VXX2705
	5	Battery Cover	AZA7204
NSP	6	Dry Cell Battery (R6P, AA)	VEM1010
	7	Pad F	VHA1247
	8	Pad R	VHA1248
	9	Packing Case	See Contrast table (2)
	10	Sheet	RHX1006
	11	Polyethylene Bag	VHL1051
NSP	12	Warranty Card	See Contrast table (2)
	13	Operating Instructions (English)	VRB1243
	14	Operating Instructions (French)	See Contrast table (2)
	15	Operating Instructions (Spanish/Portuguese)	See Contrast table (2)

(2) CONTRAST TABLE

DV-C503/KUXQ, KCXQ, RDXQ1/RA and RDXQ/RD are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.				Remarks
			KUXQ Type	KCXQ Type	RDXQ1/RA Type	RDXQ/RD Type	
⚠	1	Power Cord	ADG7022	ADG7022	ADG1158	ADG1158	
	9	Packing Case	VHG1895	VHG1951	VHG1918	VHG1919	
NSP	12	Warranty Card	ARY7045	ARY7045	ARY7025	Not used	
	14	Operating Instructions (French)	Not used	VRC1117	Not used	Not used	
	15	Operating Instructions (Spanish/Portuguese)	Not used	Not used	Not used	VRD1110	

2.2 EXTERIOR


Refer to
"2.3 TABLE MECHANISM SECTION".
RDXQ1/RA,
RDXQ/RD
Types Only
Except
KCXQ Type

(1) EXTERIOR PARTS LIST

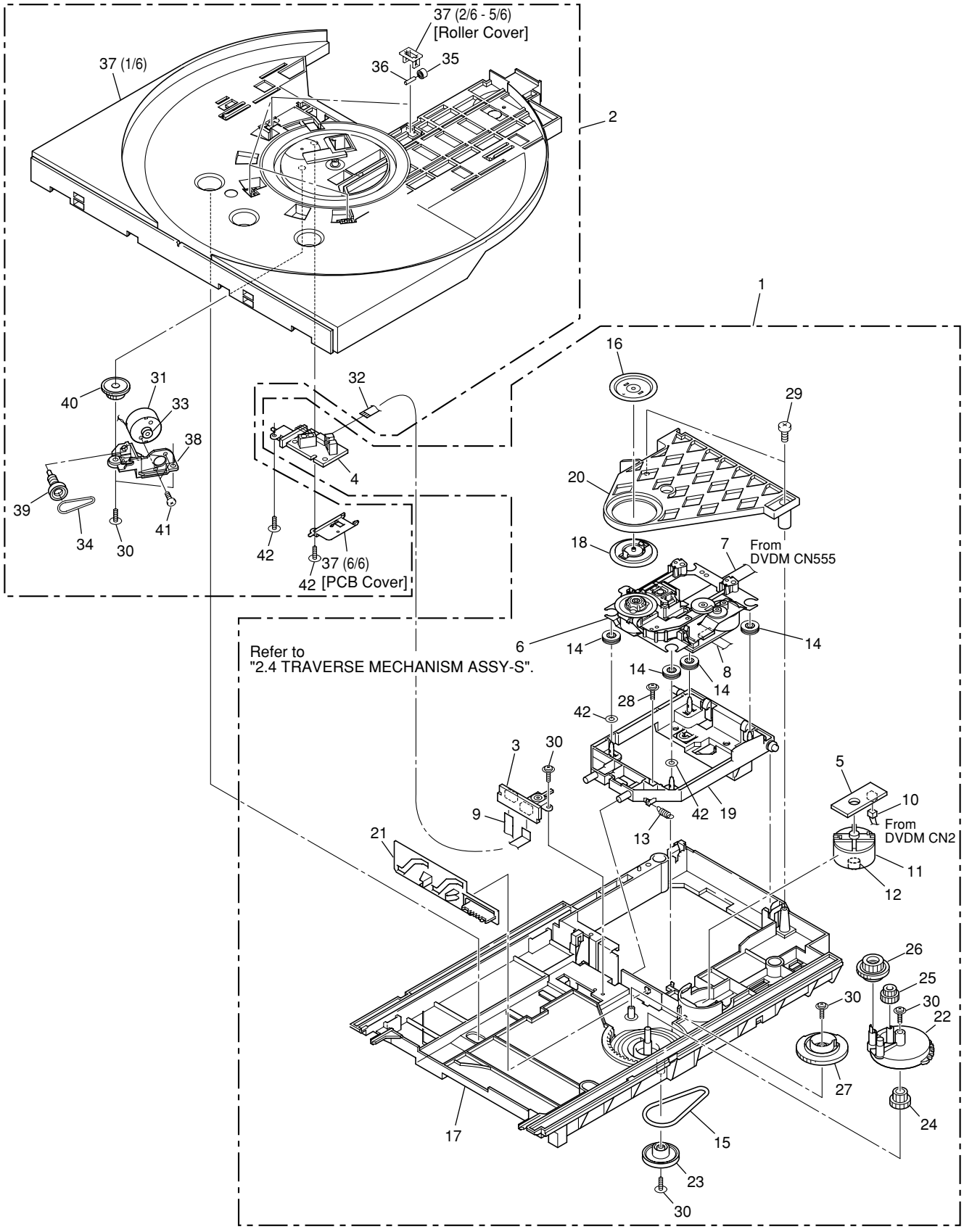
Mark	No.	Description	Part No.
	1	DVDM Assy	VWS1429
	2	JAC1 Assy	See Contrast table (2)
	3	JAC2 Assy	VWV1752
	4	FLKY Assy	See Contrast table (2)
NSP	5	KYLB Assy	VWG2186
NSP	6	PWSB Assy	VWG2188
⚠	7	POWER SUPPLY Unit	See Contrast table (2)
	8	Flexible Cable (26P)	VDA1825
	9	Flexible Cable (16P)	VDA1826
	10	Flexible Cabe (15P)	VDA1827
	11	Flexible Cable (07P)	VDA1828
	12	• • • • •	
NSP	13	PCB Holder	PNW2100
	14	Insulator	PNW2766
	15	Foot Assy	REC1263
NSP	16	PCB Support	REC1285
NSP	17	PCB Base	RNE1221
	18	Cord Clamper	RNH-184
	19	Earth Plate	VBK1121
	20	PCB Hinge	VEC1174
	21	Barrier	VEC2176
NSP	22	Base Chassis	VNA2167
	23	Rear Panel	See Contrast table (2)
NSP	24	JB Stay	VNE2223
	25	FP Angle	VNE2233
	26	Rotary Tray	VNK4739
	27	Mechanism Holder	VNL1869
	28	Mechanism Support	VNL1906
	29	DVD Badge	VAM1102
	30	PW Button	VNK4101
	31	LED Lens	VNK4503
	32	Tray Panel	VNK4604
	33	Front Panel Assy	See Contrast table (2)
	34	Pioneer Badge	VAM1109
	35	Front Panel	See Contrast table (2)
	36	Main Key	VNK4603
	37	FL Lens	VNK4617
	38	5 Key	VNK4643
	39	Bonnet S	VXX2728
	40	Label	See Contrast table (2)
	41	• • • • •	
NSP	42	Getter	See Contrast table (2)
NSP	43	TS Screw	DBA1006
	44	Screw	IBZ30P080FMC
	45	Screw	BBZ30P080FMC
	46	Screw	BCZ40P060FZK
	47	Screw	IBZ30P080FMC
	48	Screw	BBZ30P100FZK
	49	Screw	VBA1079
	50	Screw	BBZ30P060FZK
NSP	51	Large Label	VRW1855

(2) CONTRAST TABLE

DV-C503/KUXQ, KCXQ, RDXQ1/RA and RDXQ/RD are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.				Remarks
			KUXQ Type	KCXQ Type	RDXQ1/RA Type	RDXQ/RD Type	
	2	JAC1 Assy	VWV1751	VWV1751	VWV1753	VWV1753	
	4	FLKY Assy	VWG2182	VWG2182	VWG2183	VWG2183	
⚠	7	POWER SUPPLY Unit	VWR1329	VWR1329	VWR1332	VWR1332	
	23	Rear Panel	VNA2168	VNA2168	VNA2199	VNA2250	
	33	Front Panel Assy	VXA2410	VXA2410	VXA2413	VXA2413	
	35	Front Panel	VNK4602	VNK4602	VNK4655	VNK4655	
	40	Label	Not used	Not used	VRW1699	VRW1699	
NSP	42	Getter	VRW1819	Not used	VRW1819	VRW1819	

2.3 TABLE MECHANISM SECTION

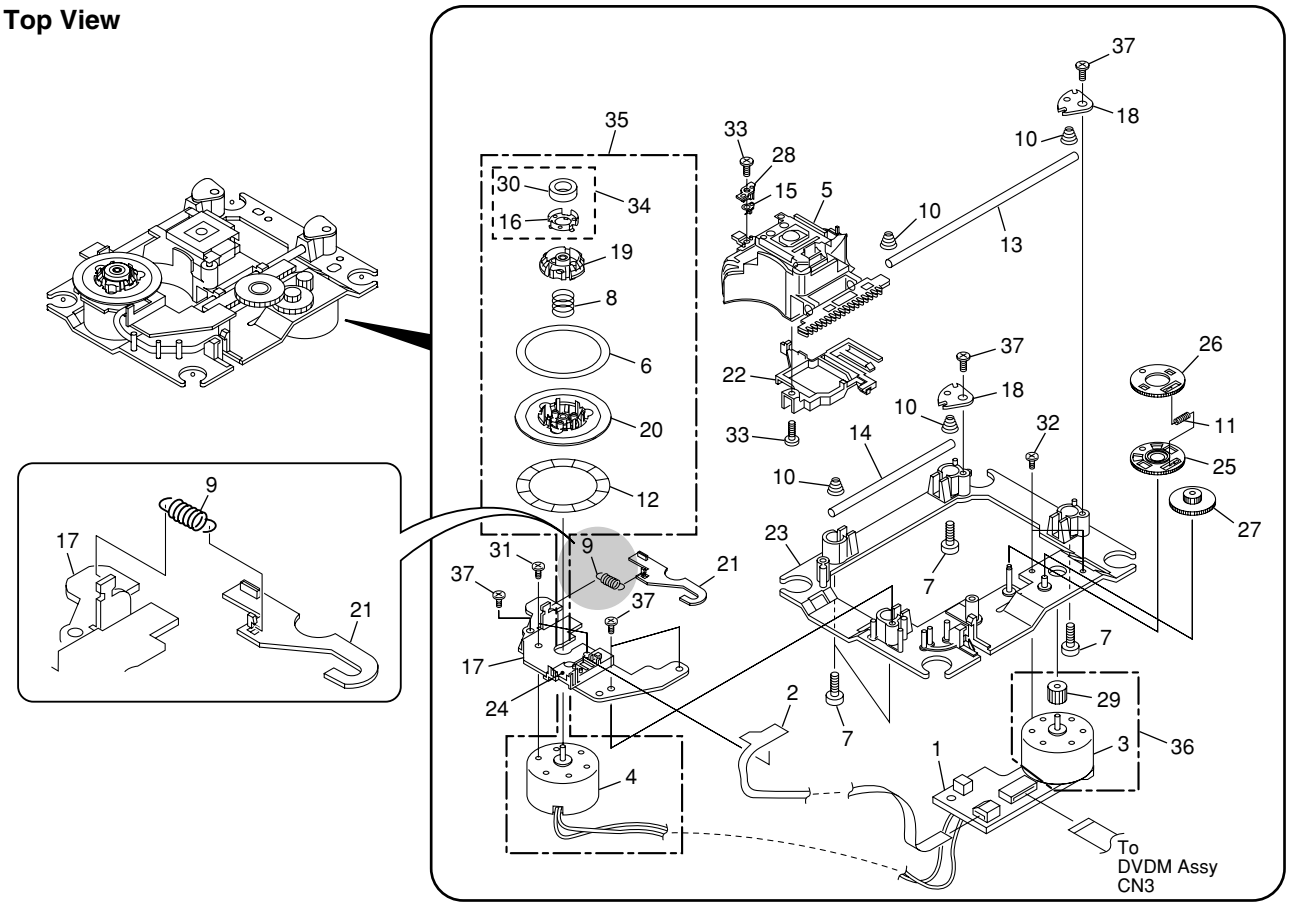


● TABLE MECHANISM SECTION PARTS LIST

Mark	No.	Description	Part No.
NSP	1	5C Mechanism Base Assy	VWT1173
NSP	2	5C Table Mechanism Assy	VWT1175
NSP	3	TRSB Assy	VWG2179
NSP	4	SSRB Assy	VWG2180
NSP	5	LOMB Assy	VWG2181
	6	Traverse Mechanism Assy-S	VXX2653
	7	Flat Flexible Cable (24P)	VDA1836
	8	Flat Flexible Cable (8P)	VDA1837
	9	Flat Flexible Cable (8P)	VDA1838
	10	Housing Assy (2P)	VKP2249
	11	Carriage Motor (LOADING)	VXM1033
	12	Motor Pulley	PNW1634
	13	Spring	VBH1324
	14	Floating Rubber	VEB1286
	15	Load Belt	VEB1316
	16	Clamper Plate	VNE2162
	17	Mechanism Base	VNK4647
	18	Clamper	VNL1738
	19	Float Base	VNL1907
	20	Clamper Holder	VNL1872
	21	Clamp Cam	VNL1873
	22	Planet Base	VNL1874
	23	Gear Pulley	VNL1876
	24	Loading Gear 1	VNL1877
	25	Loading Gear 2	VNL1908
	26	Drive Gear	VNL1879
	27	Change Gear	VNL1904
	28	Screw	ABA7009
	29	Screw	BPZ30P080FMC
	30	Screw	Z39-019
	31	Motor (TRAY)	DXM1118
	32	Flat Flexible Cable (7P)	VDA1835
	33	Motor Pulley	PNW1634
	34	Tray Belt	VEB1317
	35	Rubber Roller	VEB1318
	36	Roller Shaft	VLL1511
	37	Slide Table	VNK4751
	38	Motor Holder	VNL1880
	39	Worm Gear	VNL1881
	40	Tray Gear	VNL1882
	41	Screw	JGZ17P028FMC
	42	Spacer	VEC2177

2.4 TRAVERSE MECHANISM ASSY-S

• **Top View**

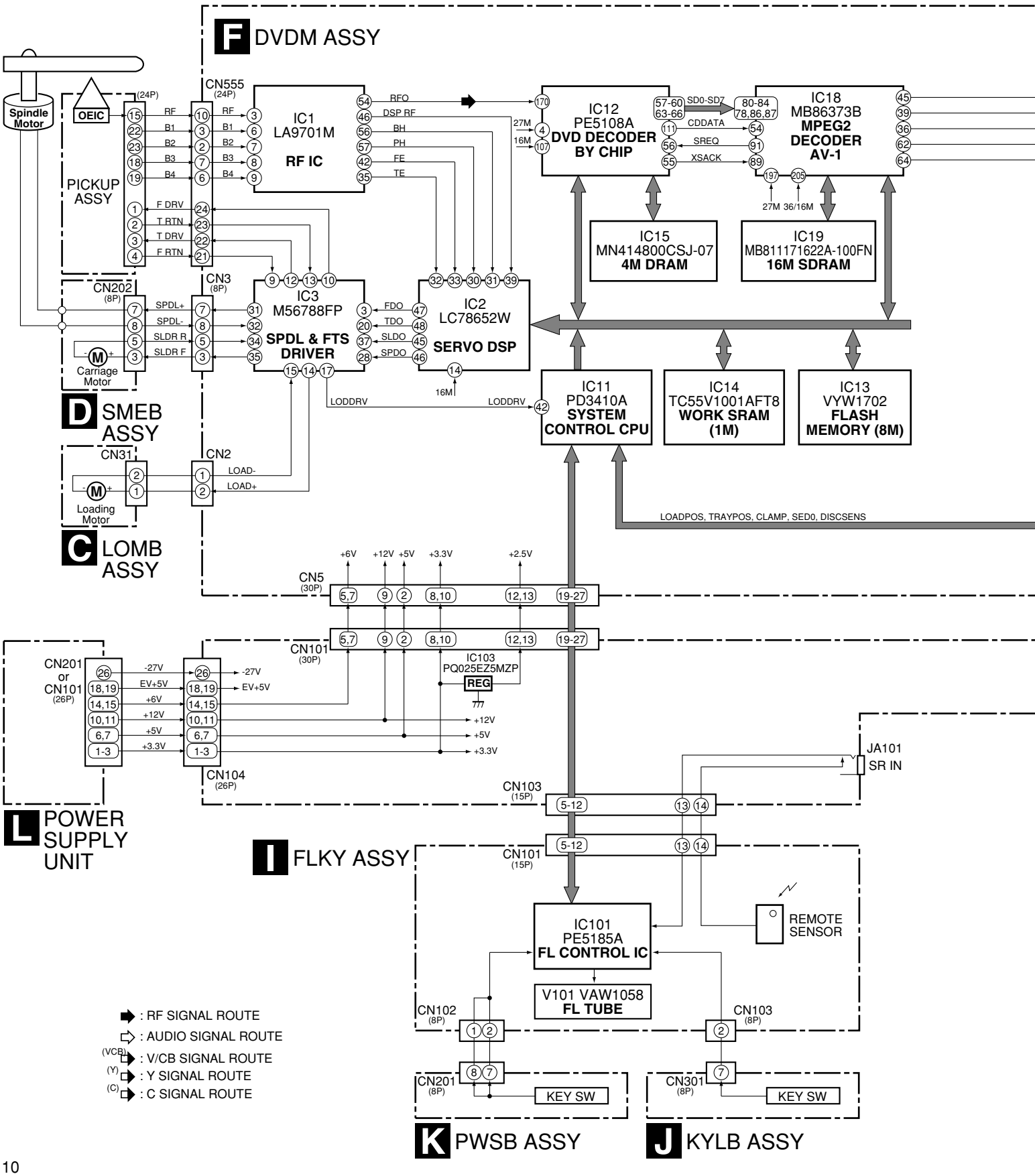


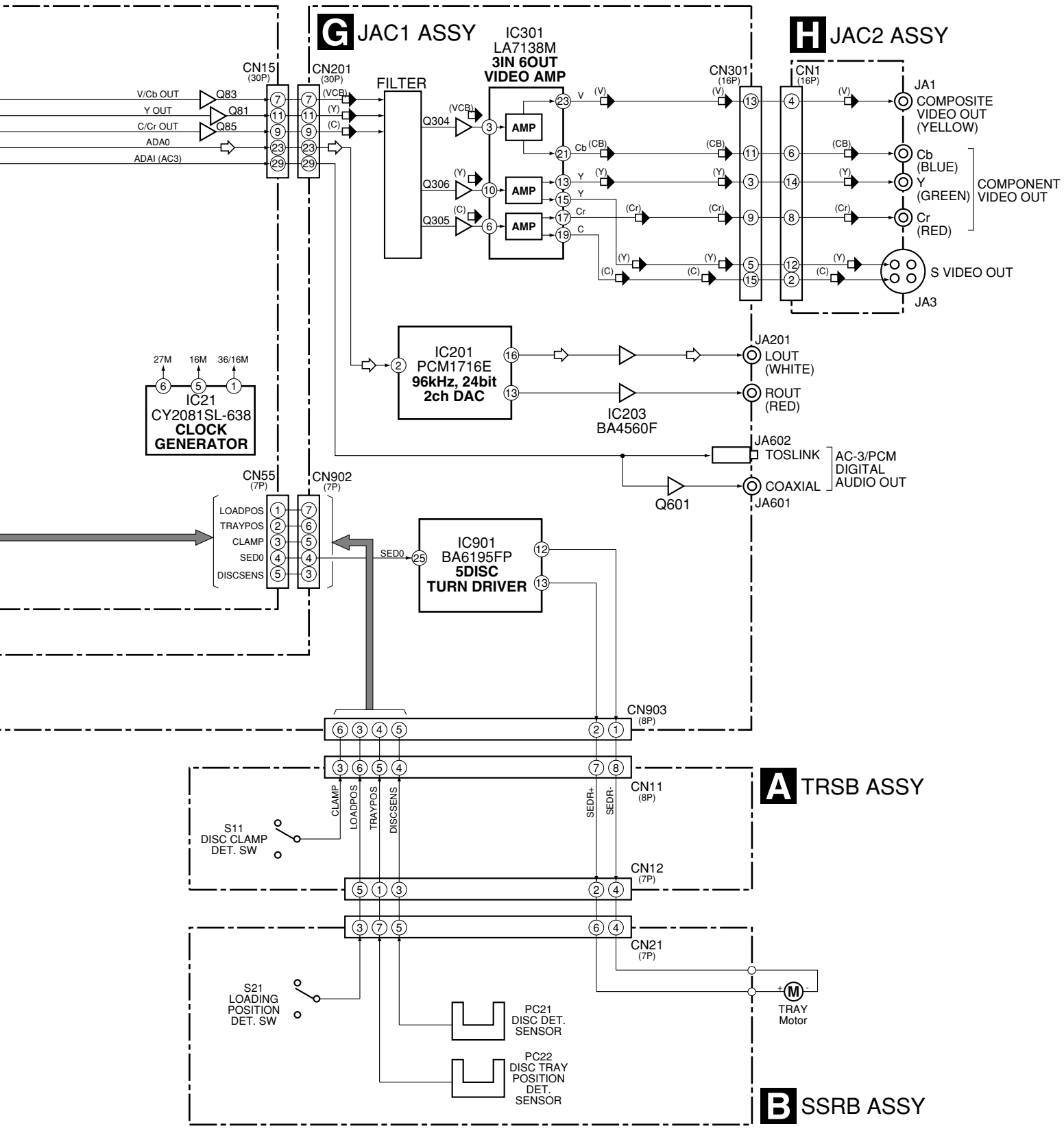
● TRAVERSE MECHANISM ASSY-S PARTS LIST

Mark	No.	Description	Part No.
NSP	1	SMEB Assy	VWG2048
NSP	2	FGSB Assy	VWG2009
NSP	3	Motor (CARRIAGE)	VXM1079
NSP	4	Motor (SPINDLE)	VXM1084
⚠ NSP	5	Pickup Assy	VWY1055
	6	Table Sheet	DEC2040
	7	Screw	VBA1058
	8	Centering Spring	VBH1278
	9	Hook Spring	VBH1317
	10	Skew Spring	VBH1303
	11	Gear Spring	VBH1308
NSP	12	Reflected Sheet	VEC1959
	13	Guide Bar	VLL1504
	14	Sub-guide Bar	VLL1505
	15	Hold Spring	VNC1017
NSP	16	Magnet Holder	VNE2070
NSP	17	Motor Base	VNE2154
NSP	18	Cover	VNE2155
	19	Centering Ring	VNL1746
NSP	20	Disc Table	VNL1747
	21	Hook	VNL1770
	22	FFC Holder	VNL1802
	23	Mechanism Base	VNL1806
	24	FG Holder	VNL1807
	25	Gear A	VNL1808
	26	Gear B	VNL1809
	27	Gear C	VNL1810
	28	Slider	VNL1811
	29	Gear D	VNL1814
NSP	30	Magnet	VYM1024
	31	Screw	JFZ17P025FZK
	32	Screw	JGZ17P028FMC
	33	Screw	VBA1051
	34	Magnet Holder Assy	VXX2507
	35	Spindle Motor Assy	VXX2649
	36	Carriage Motor Assy	VXX2650
	37	Screw	PBA1069

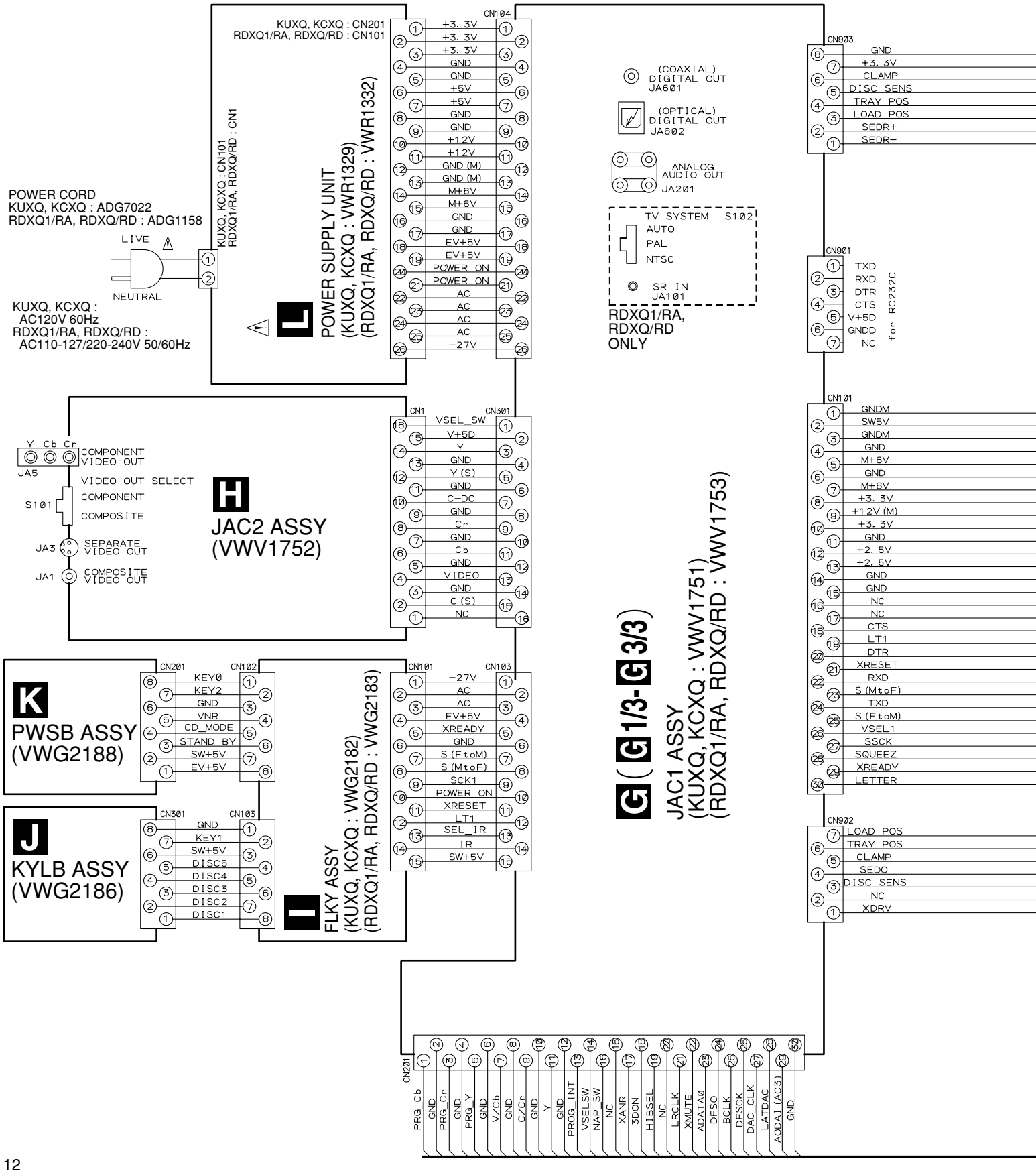
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM



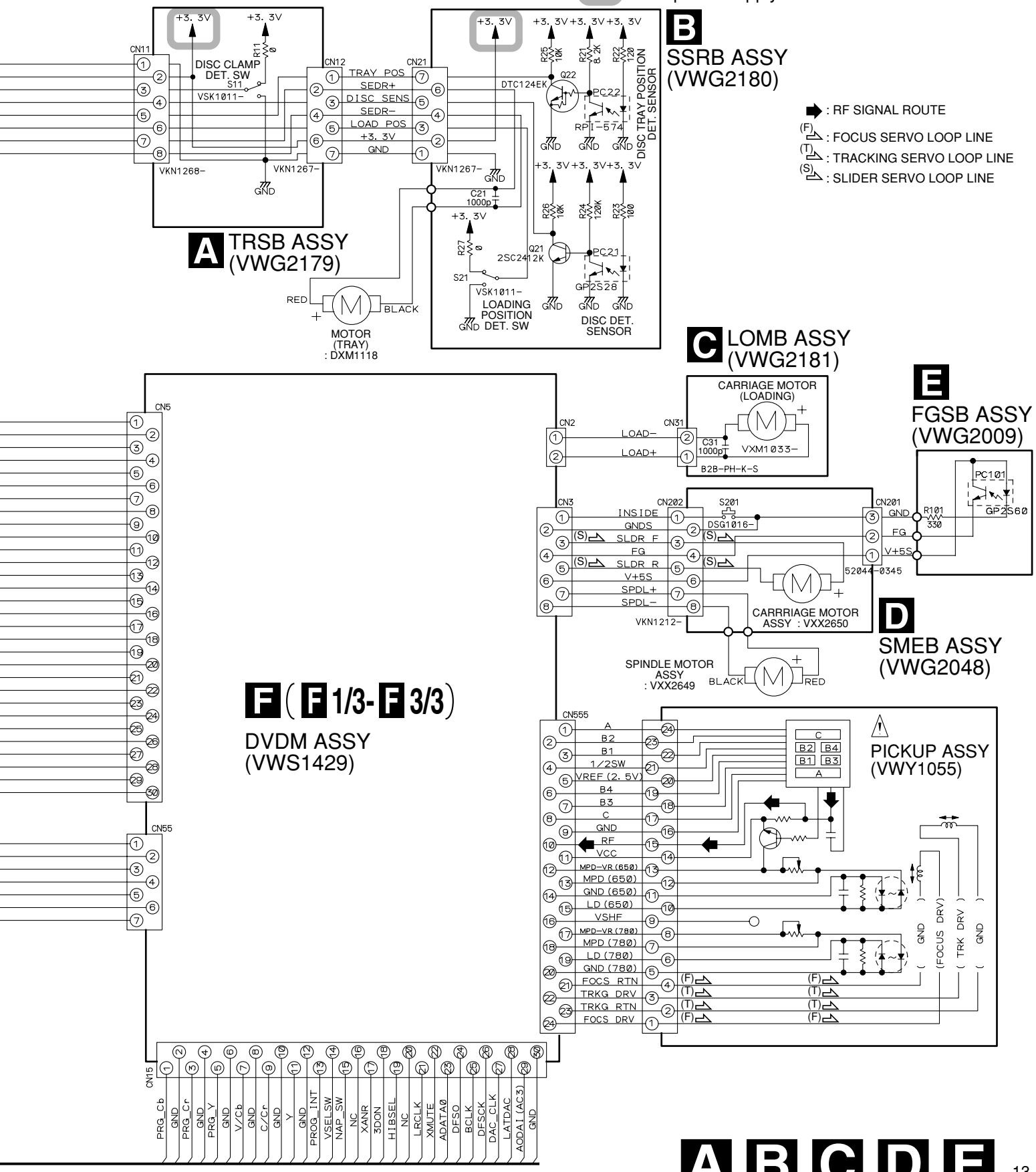

G JAC1 ASSY
IC301
LA7138M
3IN 6OUT
VIDEO AMP
FILTER
CN15
(30P)
CN201
(30P)
V/Cb OUT
Y OUT
C/Cr OUT
ADA0
ADAI (AC3)
Q83
Q81
Q85
Q304
Q306
Q305
AMP
CN301
(16P)
H JAC2 ASSY
CN1
(16P)
JA1
COMPOSITE
VIDEO OUT
(YELLOW)
Cb
(BLUE)
Y
(GREEN)
Cr
(RED)
COMPONENT
VIDEO OUT
S VIDEO OUT
JA3
IC201
PCM1716E
96kHz, 24bit
2ch DAC
IC203
BA4560F
JA201
LOUT
(WHITE)
ROUT
(RED)
27M
16M
36/16M
IC21
CY2081SL-638
CLOCK
GENERATOR
JA602
TOSLINK
COAXIAL
AC-3/PCM
DIGITAL
AUDIO OUT
Q601
JA601
CN55
(7P)
CN902
(7P)
LOADPOS
TRAYPOS
CLAMP
SED0
DISCSENS
IC901
BA6195FP
5DISC
TURN DRIVER
CN903
(8P)
CN11
(8P)
A TRSB ASSY
S11
DISC CLAMP
DET. SW
SEDR+
SEDR-
CN12
(7P)
CN21
(7P)
S21
LOADING
POSITION
DET. SW
PC21
DISC DET.
SENSOR
PC22
DISC TRAY
POSITION
DET.
SENSOR
TRAY
Motor
B SSRB ASSY

3.2 TRSB, SSRB, LOMB, SMEB, FGSB ASSYS and OVERALL WIRING DIAGRAM

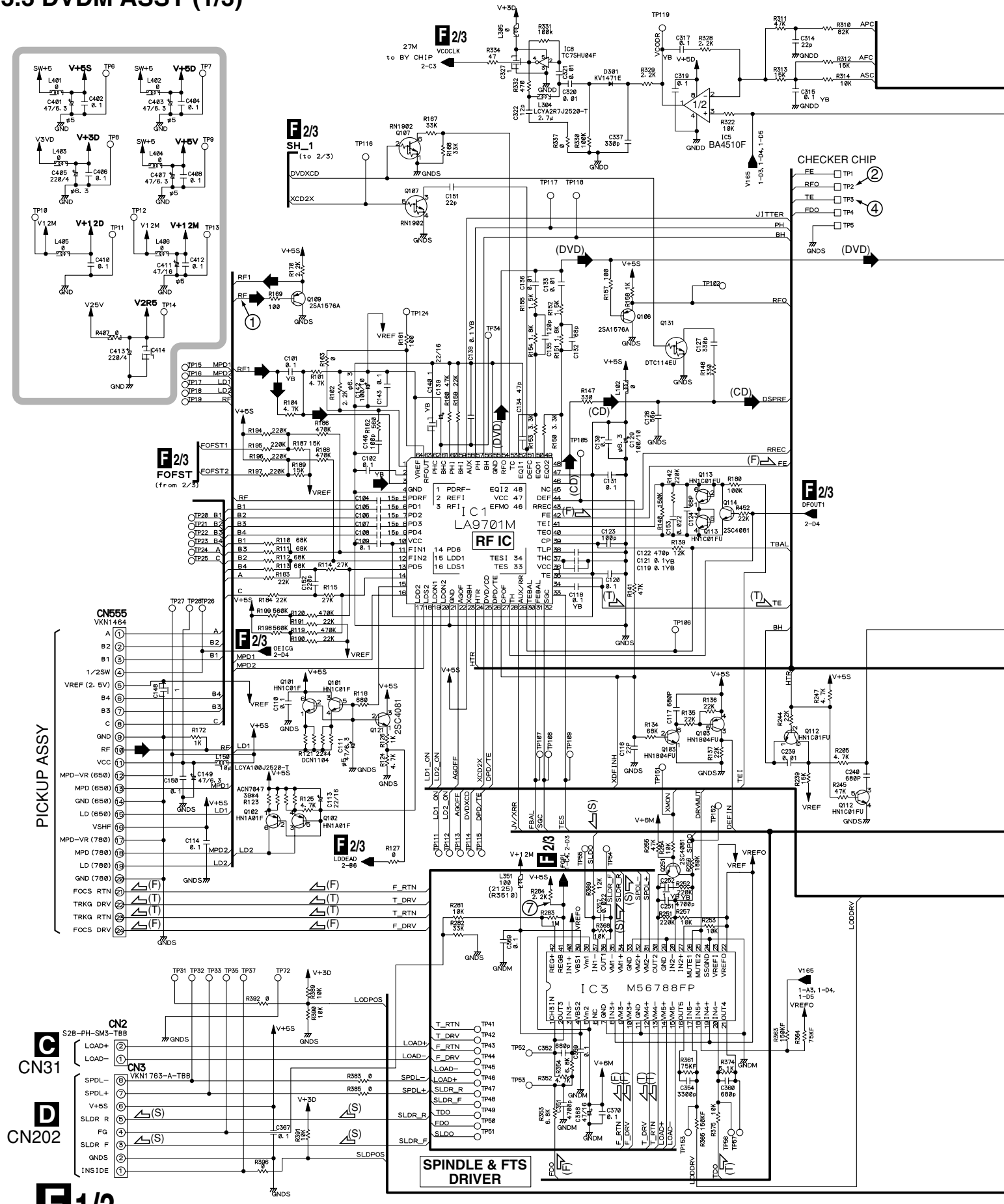


Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".

: The power supply is shown with the marked box.

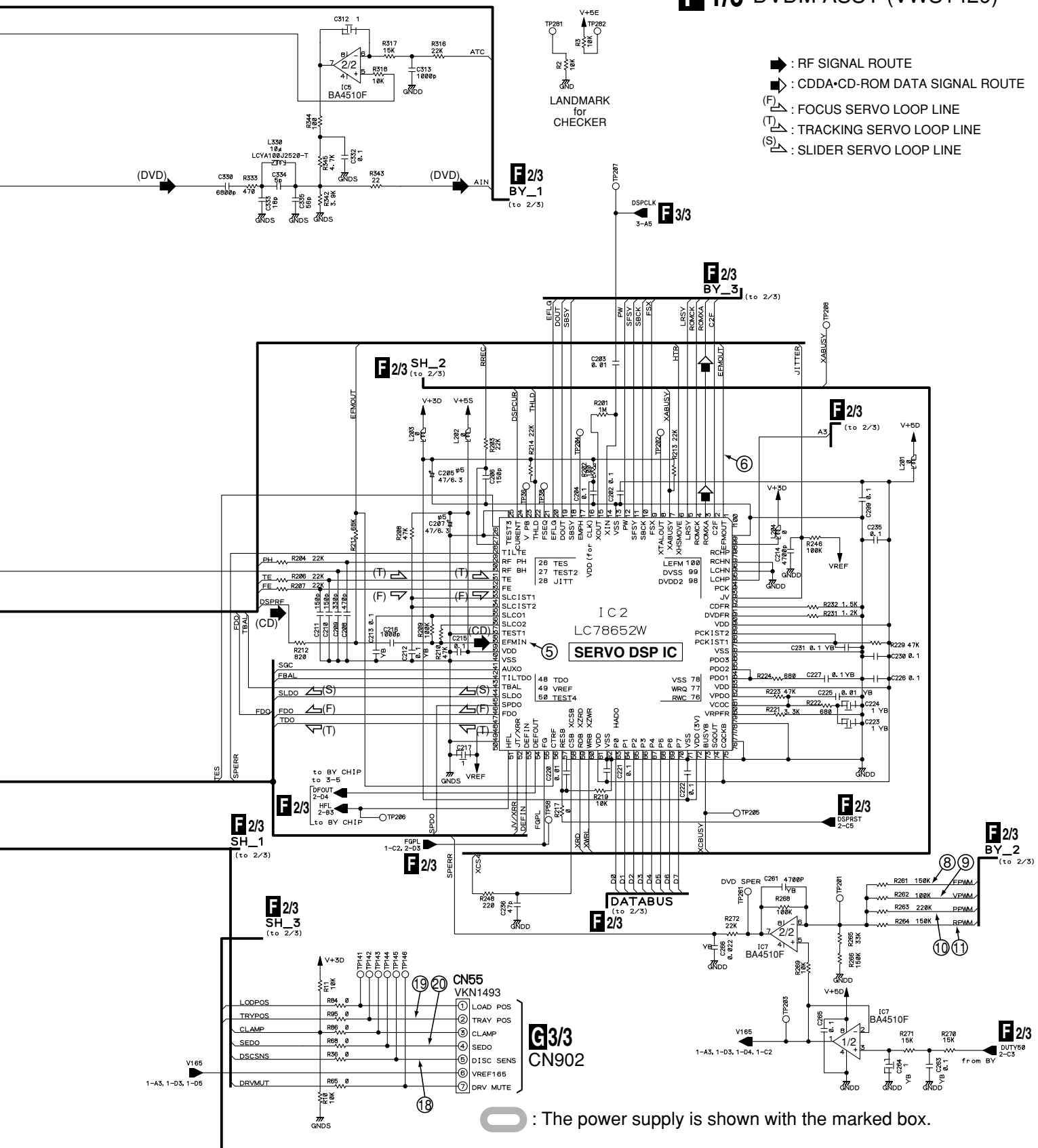


3.3 DVDM ASSY (1/3)



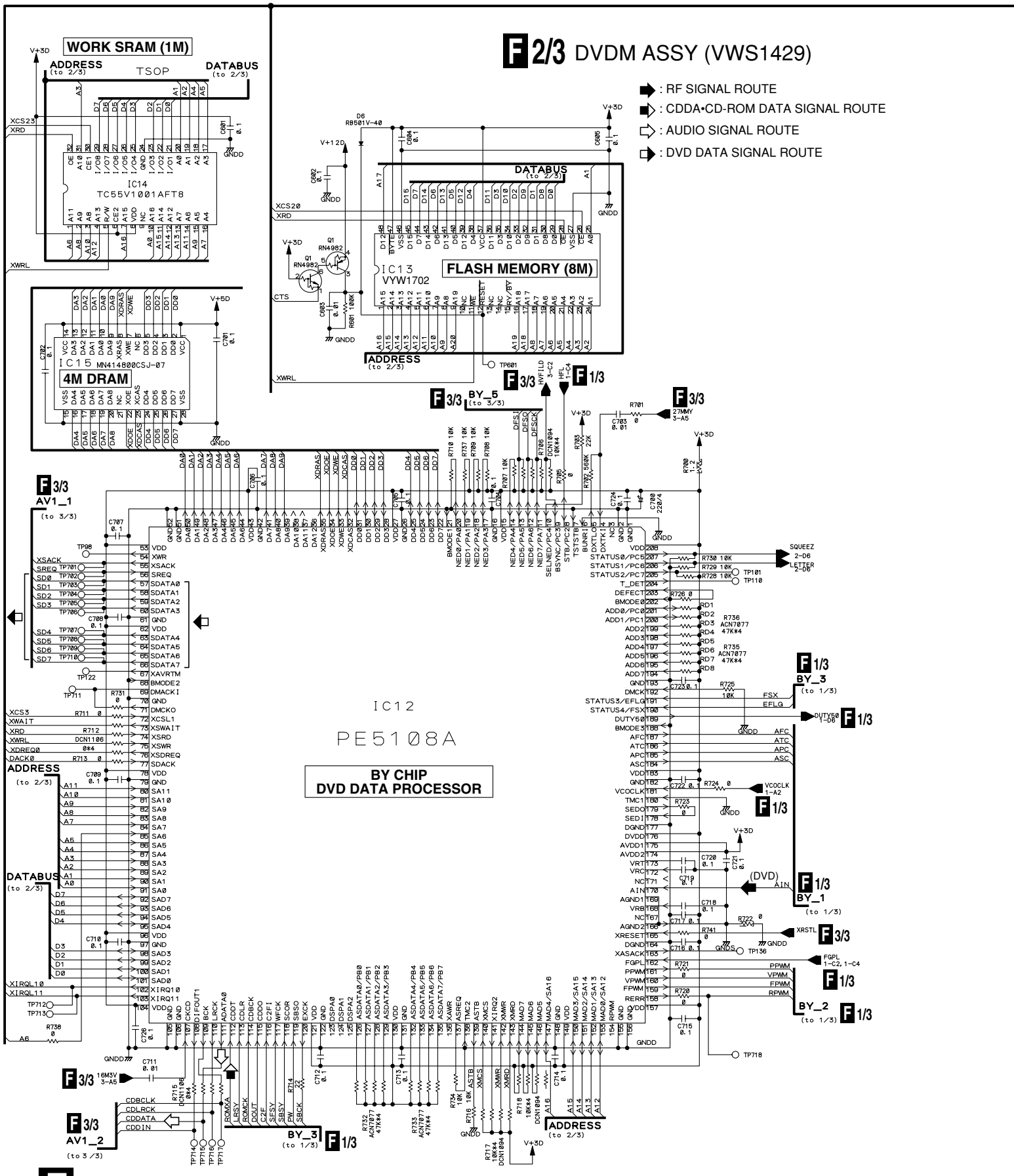
F 1/3 DVDM ASSY (VWS1429)

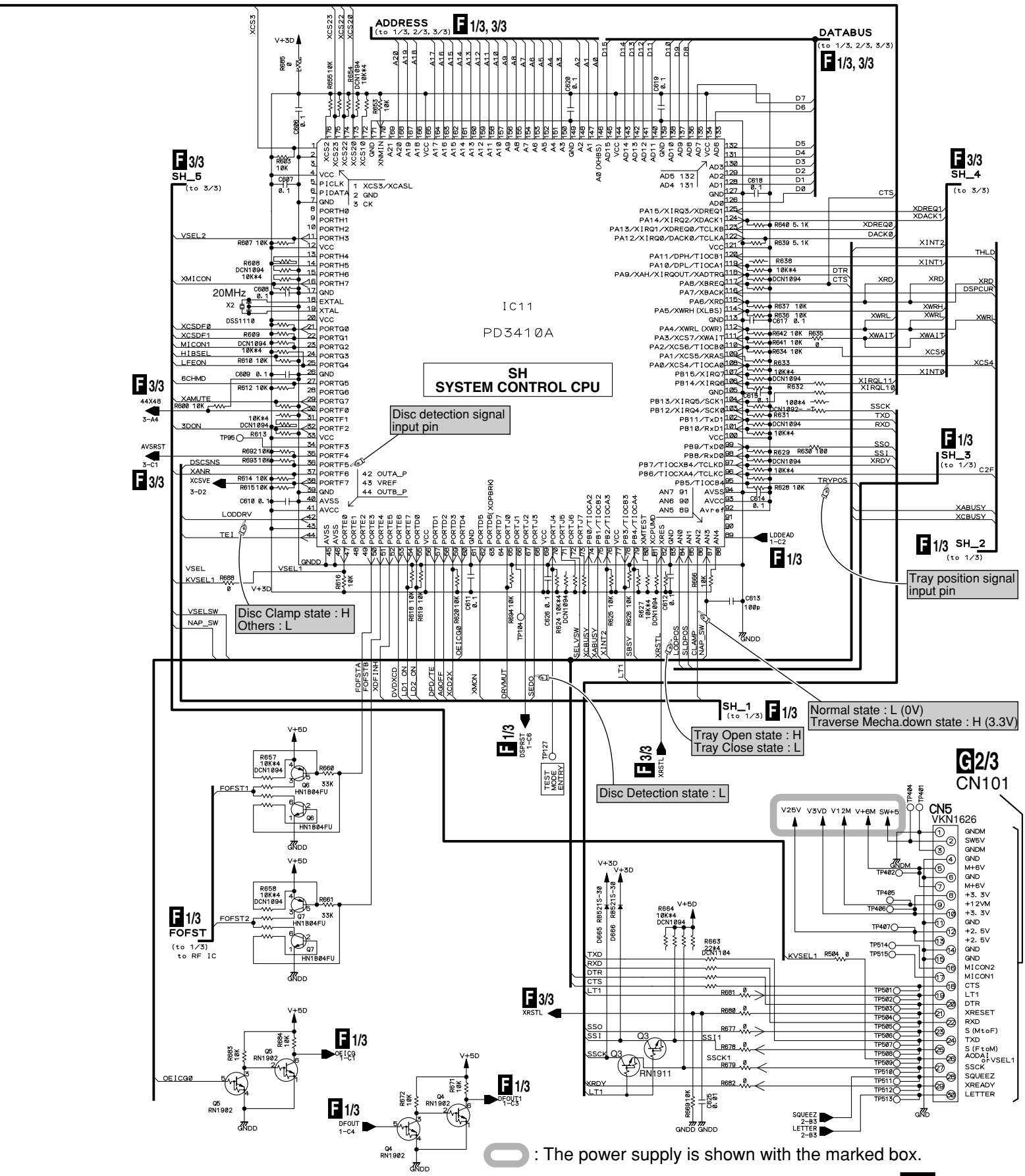
: RF SIGNAL ROUTE
: CDDA•CD-ROM DATA SIGNAL ROUTE
(F) : FOCUS SERVO LOOP LINE
(T) : TRACKING SERVO LOOP LINE
(S) : SLIDER SERVO LOOP LINE



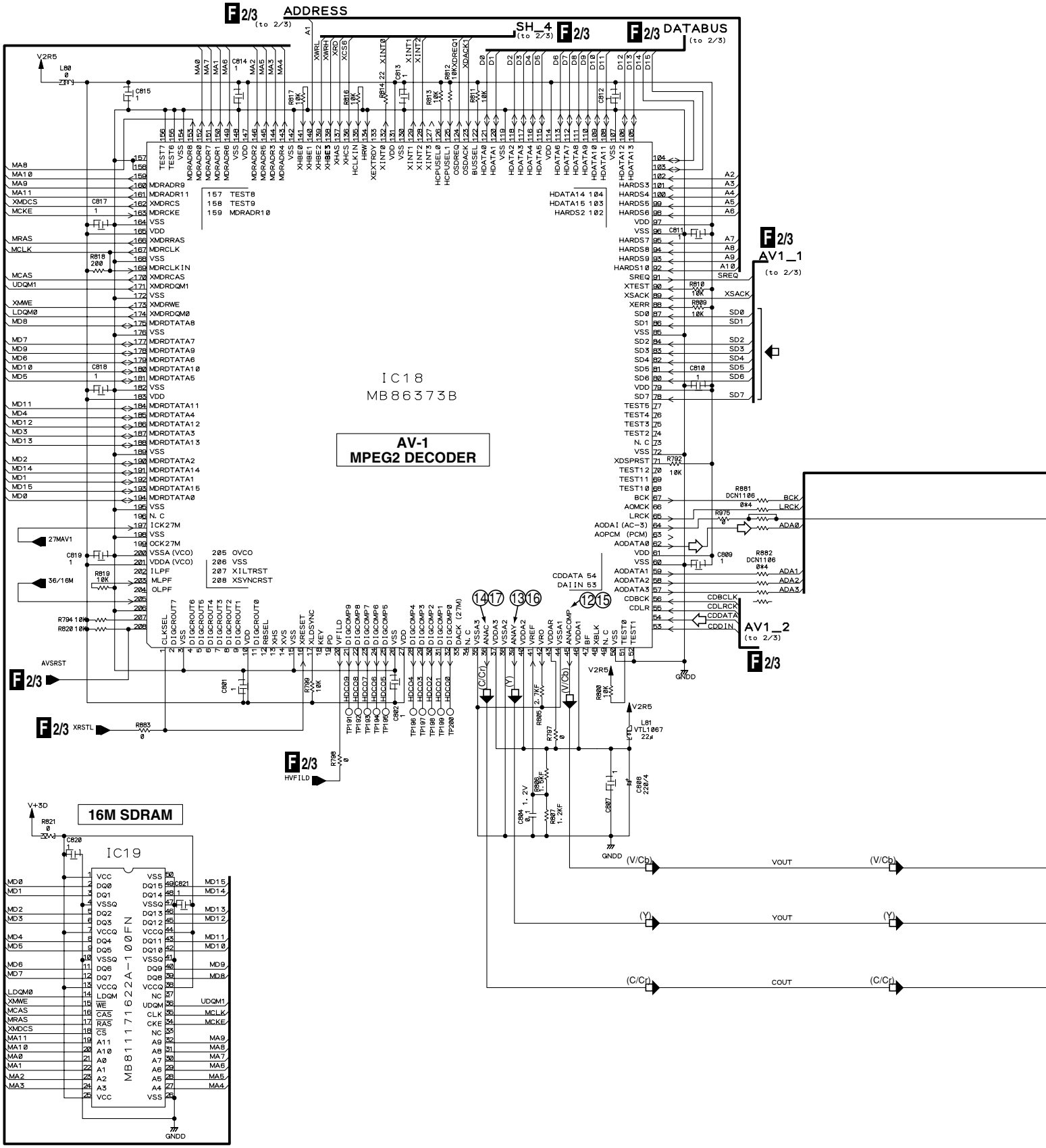
: The power supply is shown with the marked box.

3.4 DVDM ASSY (2/3)



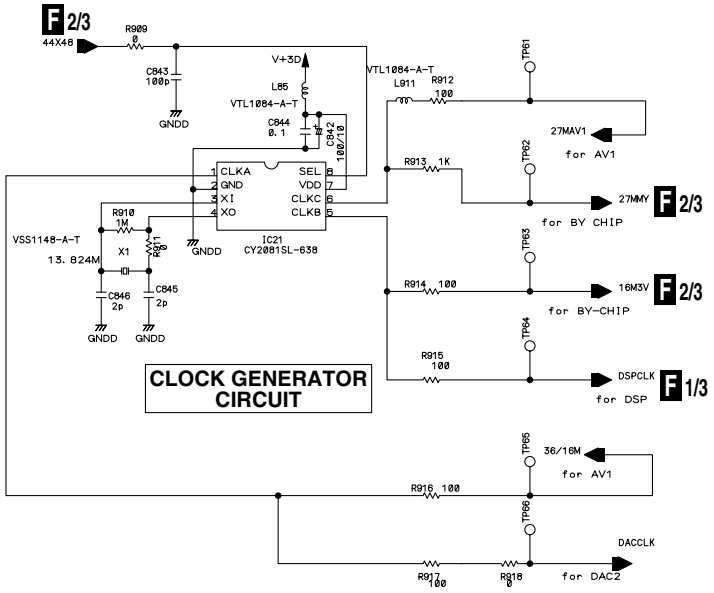

ADDRESS
(to 1/3, 2/3, 3/3)
F 1/3, 3/3
DATABUS
(to 1/3, 2/3, 3/3)
F 1/3, 3/3
IC11
PD3410A
SH
SYSTEM CONTROL CPU
Disc detection signal input pin
Disc Clamp state : H
Others : L
Tray position signal input pin
Normal state : L (0V)
Traverse Mecha.down state : H (3.3V)
Tray Open state : H
Tray Close state : L
Disc Detection state : L
SH_5
SH_4
SH_3
SH_2
SH_1
F 3/3
F 1/3
20MHz
DSS1110
PD3410A
CN5
VKN1626
G2/3
CN101
FOFST
(to 1/3)
to RF IC
: The power supply is shown with the marked box.

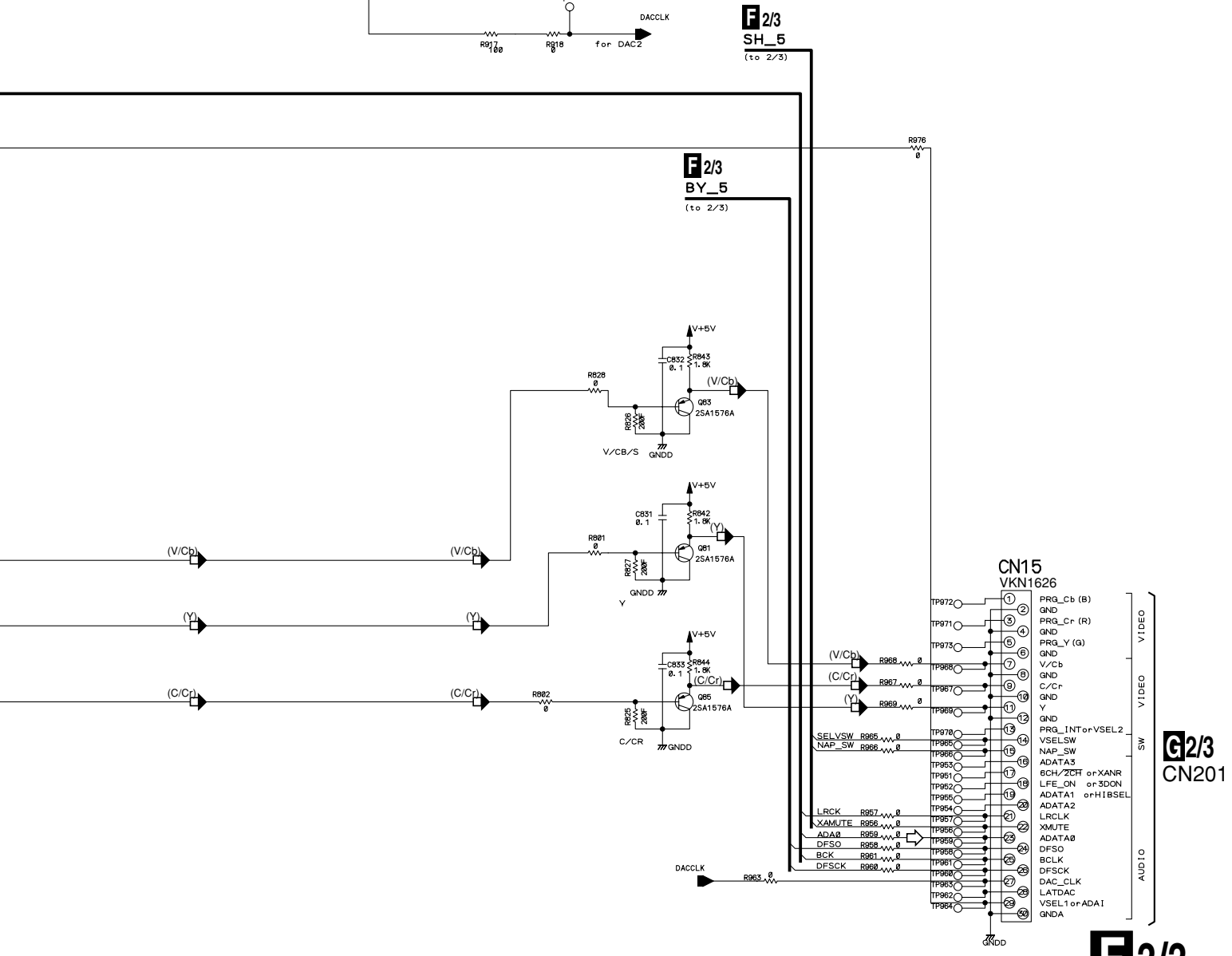
3.5 DVDM ASSY (3/3)



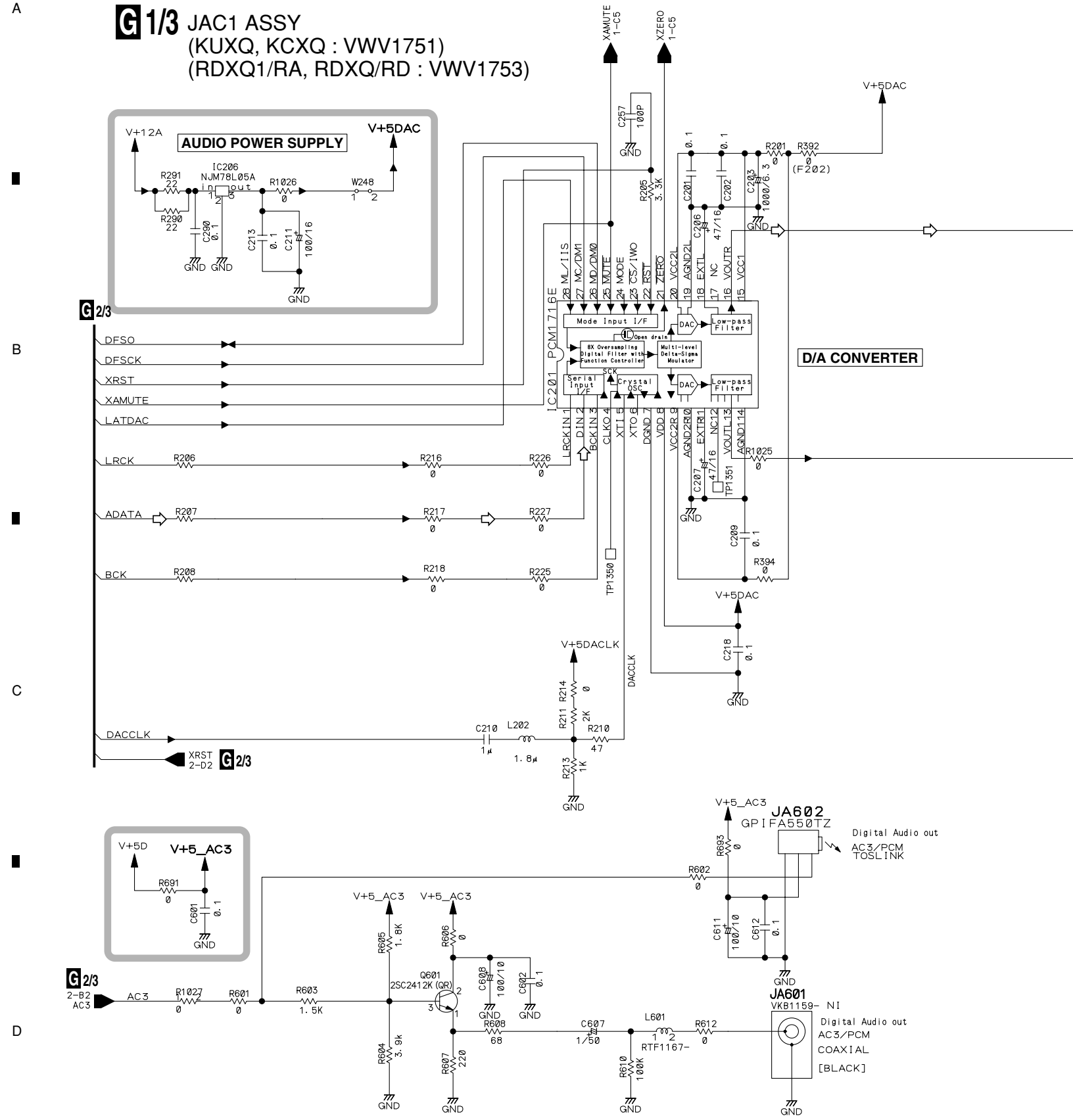
F 3/3 DVDM ASSY (VWS1429)

: AUDIO SIGNAL ROUTE
: DVD DATA SIGNAL ROUTE
(V/Cb) : V/Cb SIGNAL ROUTE
(Y) : Y SIGNAL ROUTE
(C/Cr) : C/Cr SIGNAL ROUTE



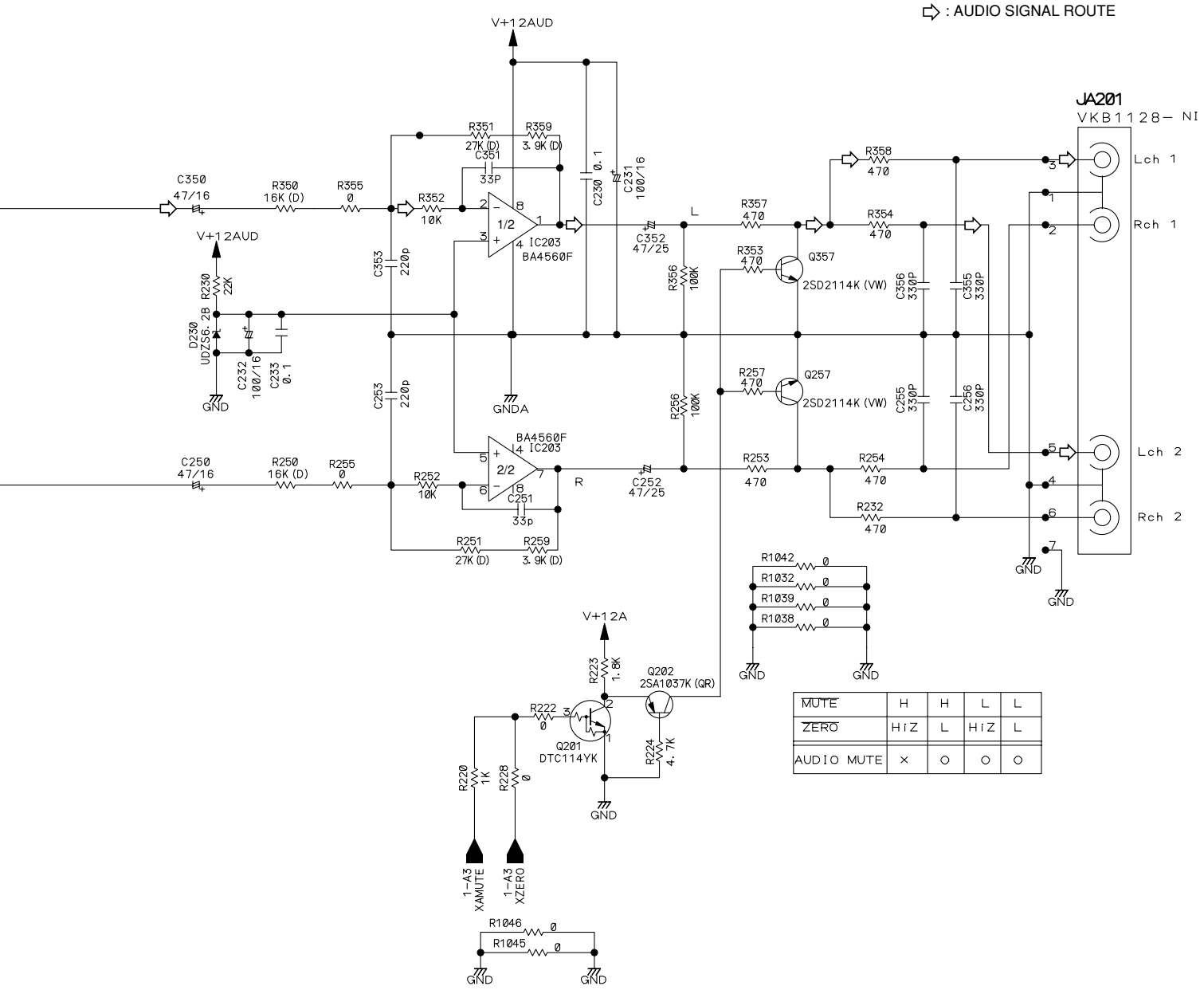


3.6 JAC1 ASSY (1/3)



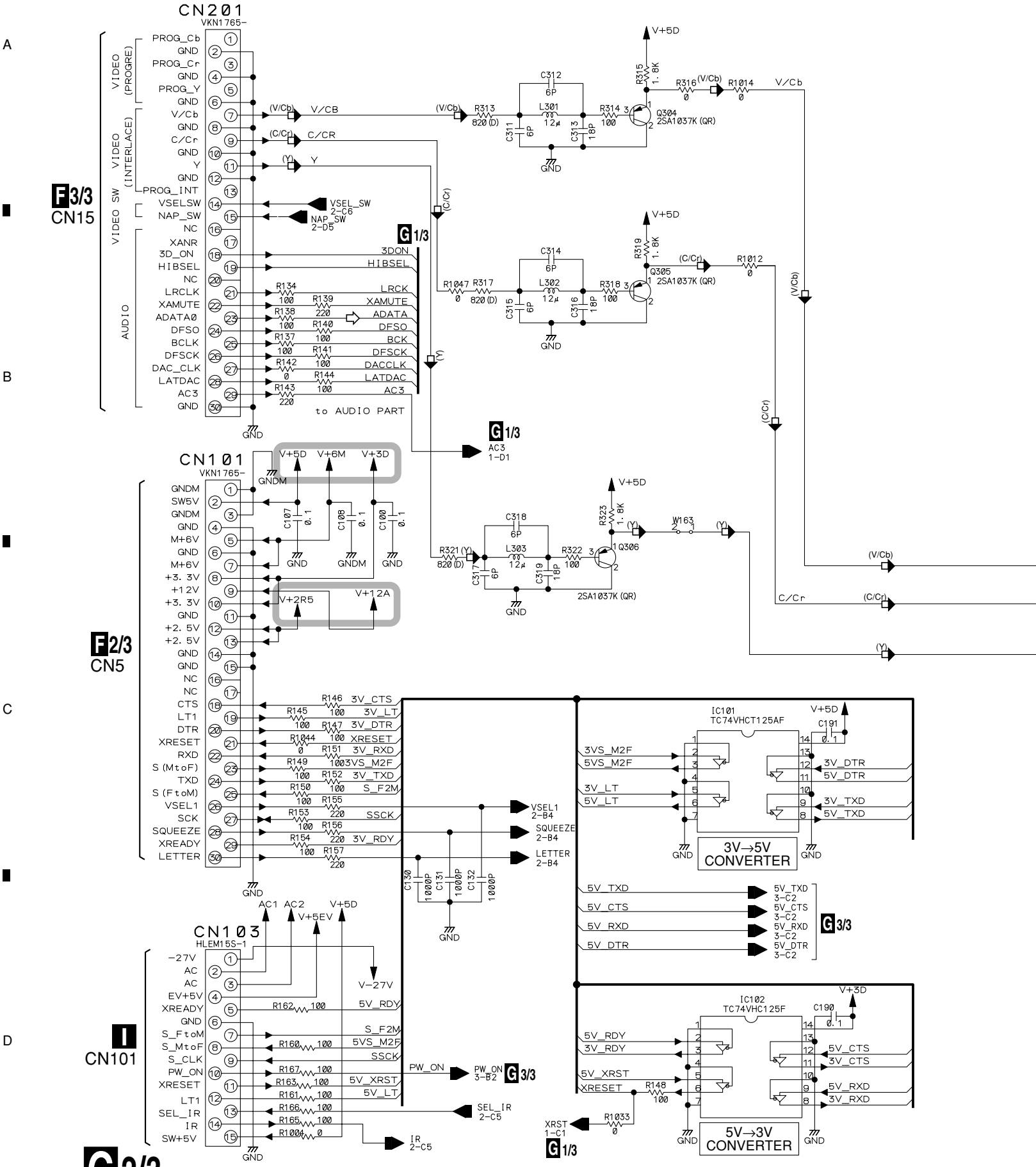
: The power supply is shown with the marked box.

: AUDIO SIGNAL ROUTE



MUTE	H	H	L	L
ZERO	HiZ	L	HiZ	L
AUDIO MUTE	×	O	O	O

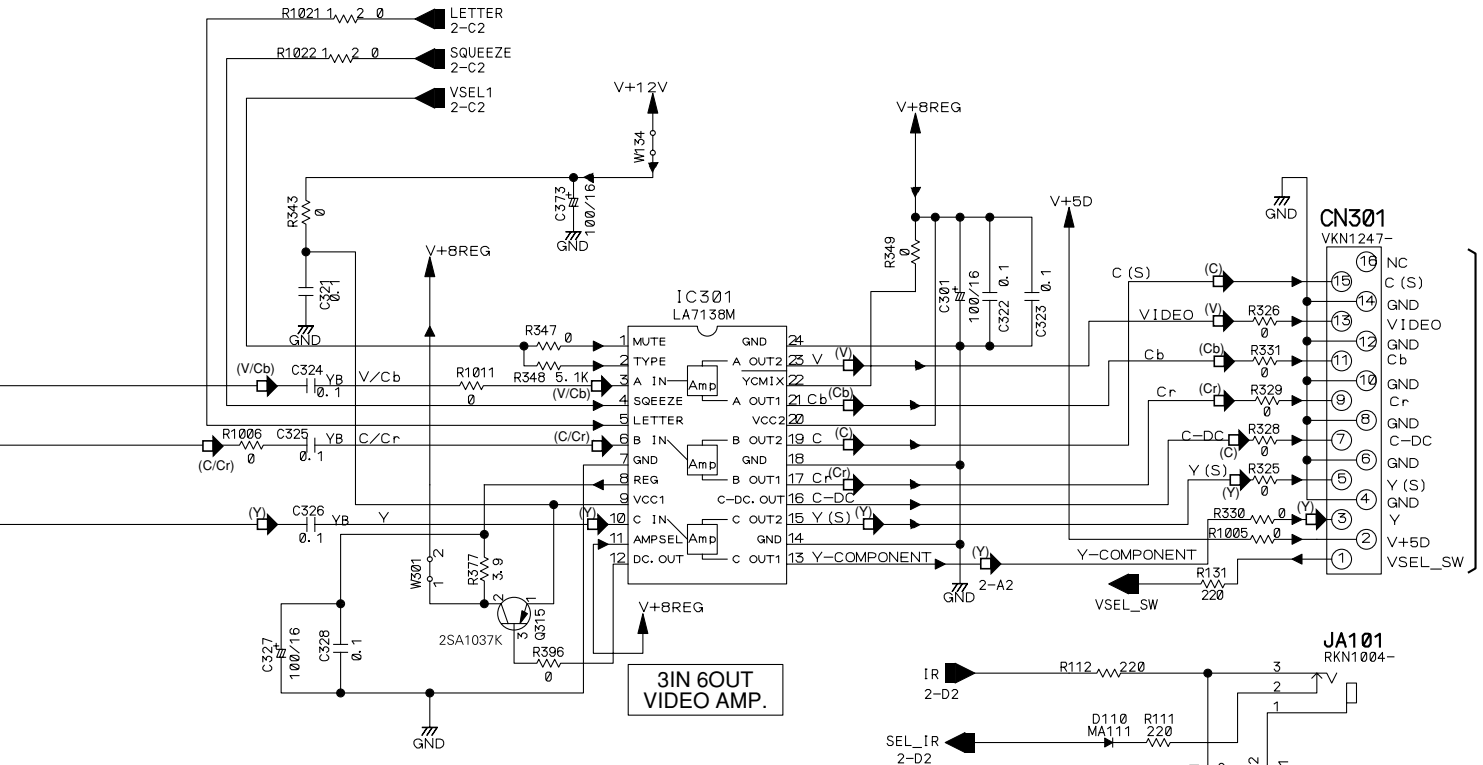
3.7 JAC1 ASSY (2/3)



G 2/3 JAC1 ASSY
(KUXQ, KCXQ : VWV1751)
(RDXQ1/RA, RDXQ/RD : VWV1753)

: The power supply is shown with the marked box.

: AUDIO SIGNAL ROUTE
(V/Cb) : V/Cb SIGNAL ROUTE
(Y) : Y SIGNAL ROUTE
(C/Cr) : C/Cr SIGNAL ROUTE



	Low	High
VSEL1	Ain=V Bin=C	Ain=Cb Bin=Cr

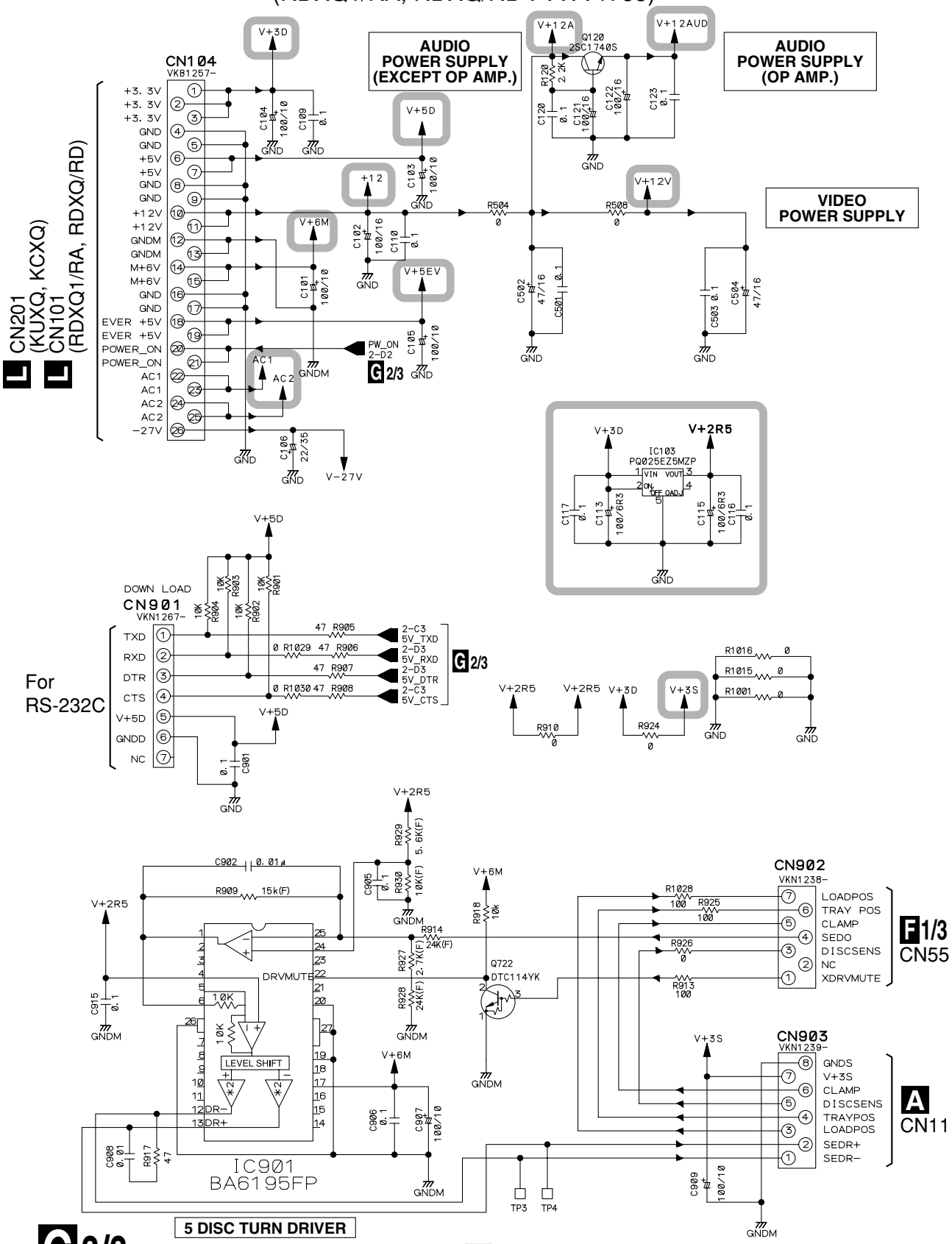
	Low	Open	High
1 MUTE	13, 17, 21MUTE 15, 19, 23OUTPUT	NO MUTE	15, 19, 23MUTE 13, 17, 21OUTPUT
2 TYPE	S OUTPUT COMPOSITE		COMPONENT
11 AMPSEL	6dB		8dB (ALL)
22 YCMIX	ON (OTHER)		OFF (C503)

SQUEEZE	LETTER	C-DC VOLTAGE	VIDEO OUT MODE
Low	Low	0V	4:3 MODE
Low	High	2.5V	LETTER BOX
High	Low	5V	SQUEEZE
High	High	INVALID	INVALID

NAP_SW VOLTAGE	VIDEO OUT TYPE
3.0V	NTSC
1.25V	AUTO
0.0V	PAL

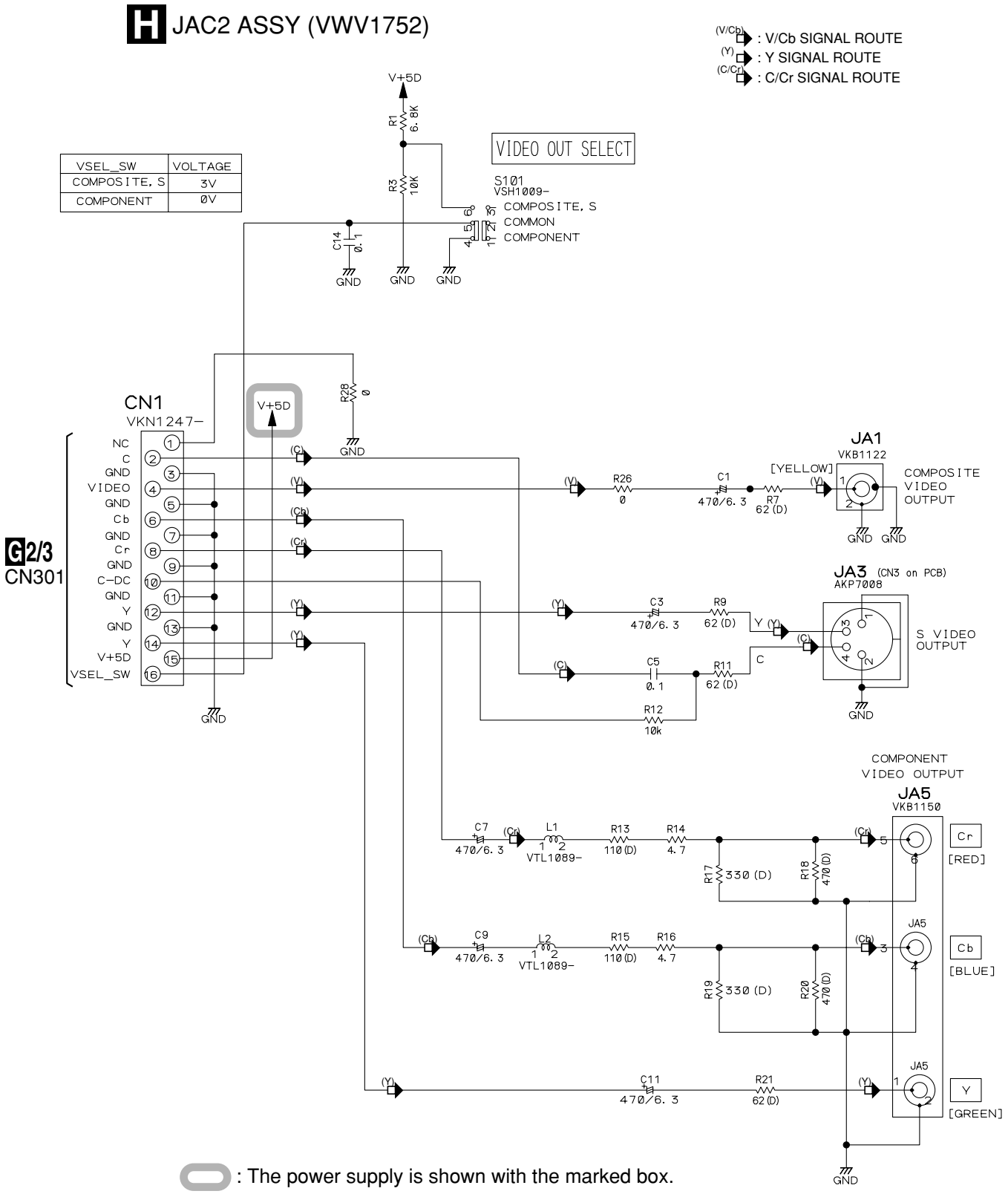
3.8 JAC1 ASSY (3/3)

G 3/3 JAC1 ASSY
(KUXQ, KCXQ : VWV1751)
(RDXQ1/RA, RDXQ/RD : VWV1753)



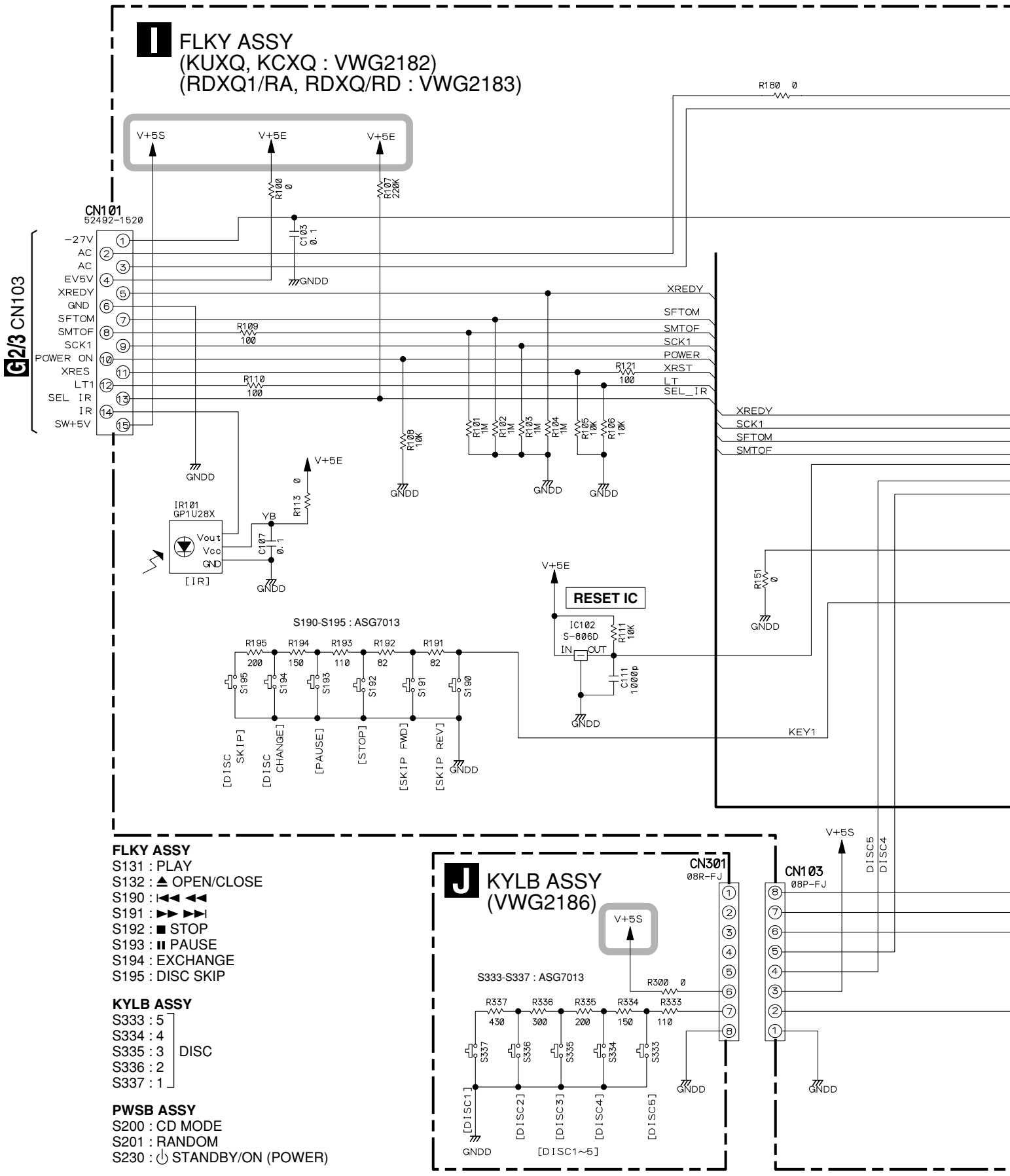
: The power supply is shown with the marked box.

3.9 JAC2 ASSY



: The power supply is shown with the marked box.

3.10 FLKY, KYLB and PWSB ASSYS

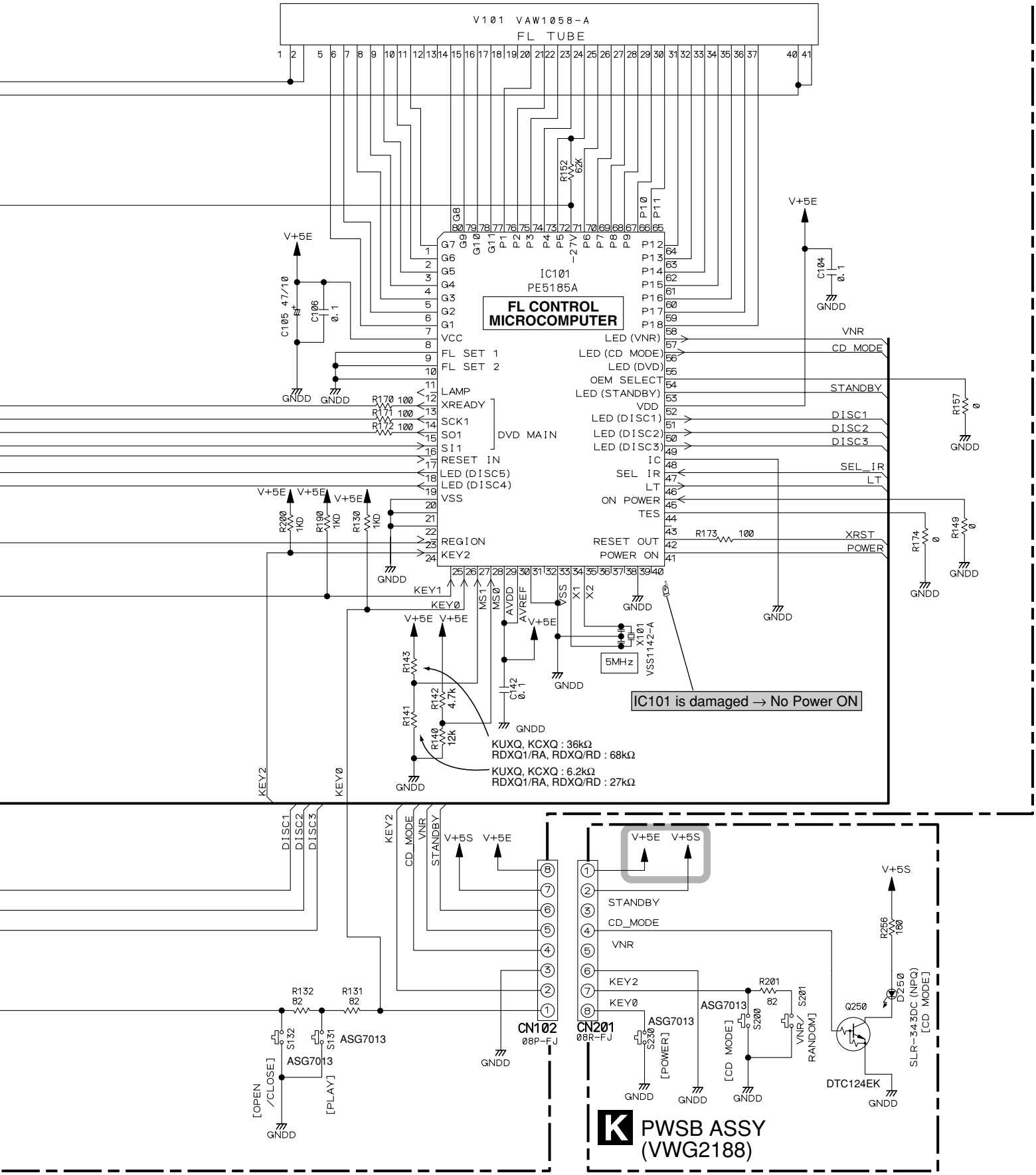


FLKY ASSY
S131 : PLAY
S132 : ⏏ OPEN/CLOSE
S190 : ⏮ ◀◀
S191 : ▶▶ ⏭
S192 : ■ STOP
S193 : ⏸ PAUSE
S194 : EXCHANGE
S195 : DISC SKIP

KYLB ASSY
S333 : 5
S334 : 4
S335 : 3
S336 : 2
S337 : 1
DISC

PWSB ASSY
S200 : CD MODE
S201 : RANDOM
S230 : ⏻ STANDBY/ON (POWER)

: The power supply is shown with the marked box.

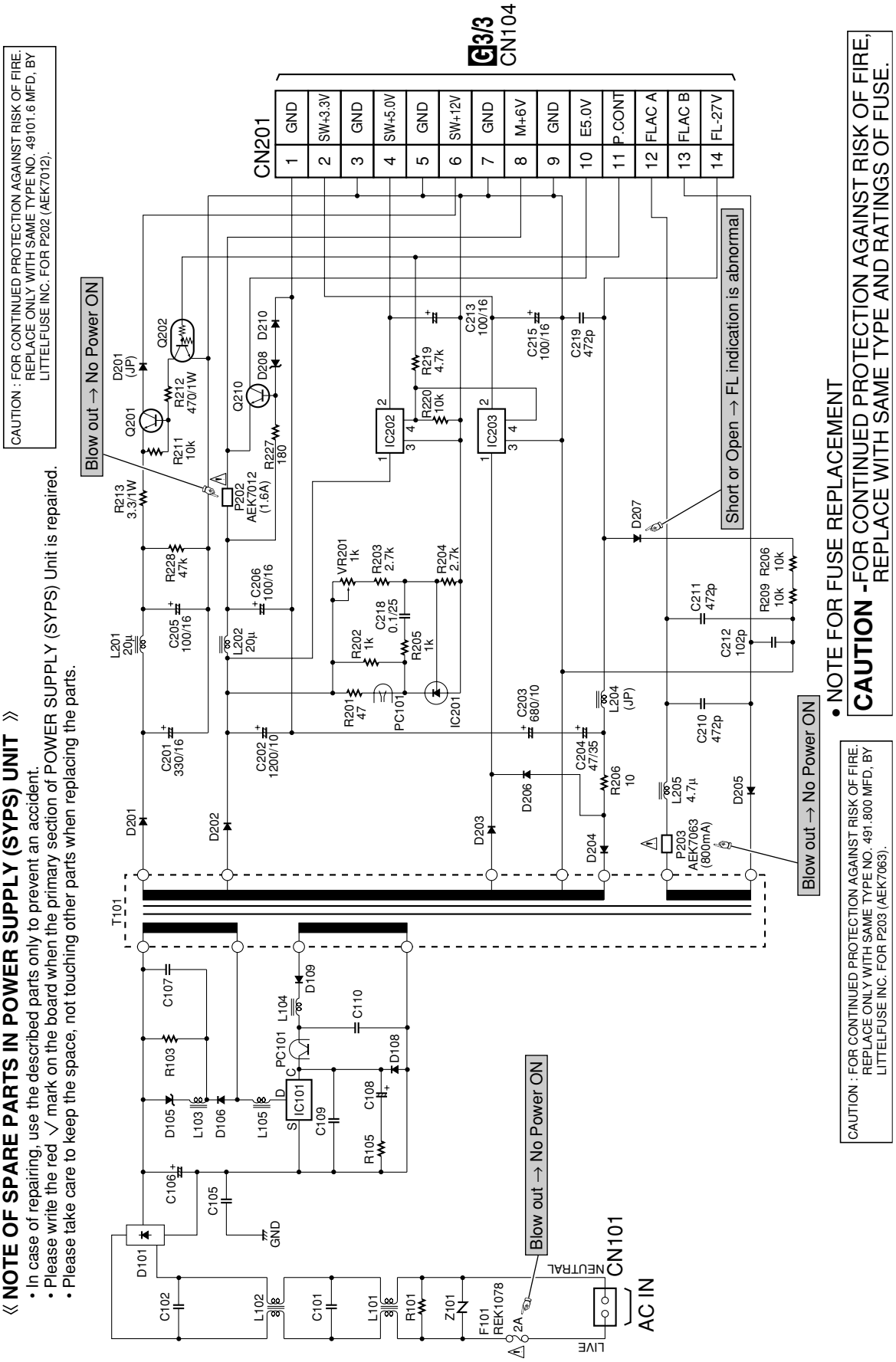


3.11 POWER SUPPLY UNIT (VWR1329)

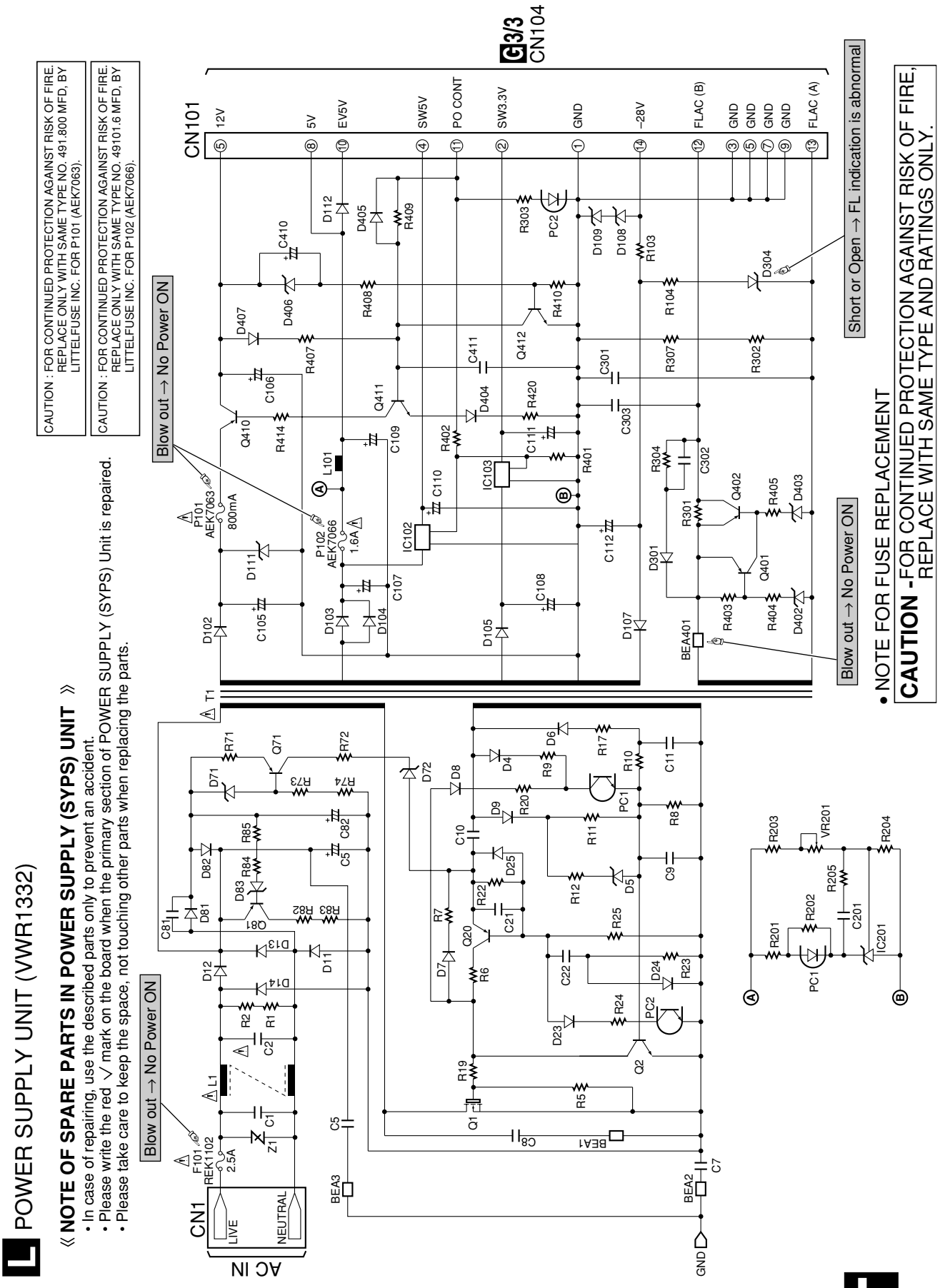
POWER SUPPLY UNIT (VWR1329)

《 NOTE OF SPARE PARTS IN POWER SUPPLY (SYPS) UNIT 》

- In case of repairing, use the described parts only to prevent an accident.
- Please write the red √ mark on the board when the primary section of POWER SUPPLY (SYPS) Unit is repaired.
- Please take care to keep the space, not touching other parts when replacing the parts.



3.12 POWER SUPPLY UNIT (VWR1332)

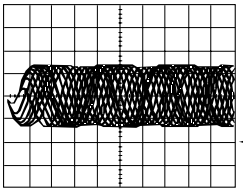


■ WAVEFORMS

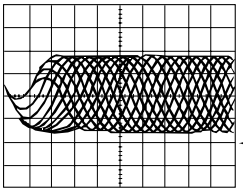
Note : The encircled numbers denote measuring point in the schematic diagram.

Measurement condition : No. 1 to 4 and 6 to 11 : MJK1, Title 1-chp 1
No. 5 : CD, ABEX-784 Track 1
No. 12 to 14 : MJK1, Title 1-chp 4
No. 15 to 17 : MJK1, Title 1-chp 5

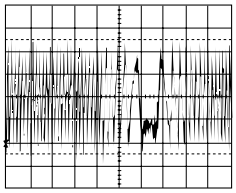
① **Foot of R169 (RF)**
V: 100mV/div. H: 0.2µsec/div.



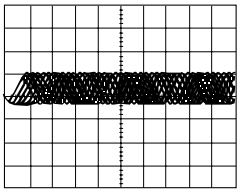
② **TP2 (RFO)**
V: 500mV/div. H: 0.1µsec/div.



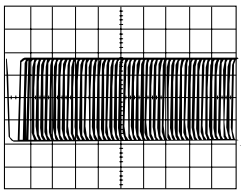
④ **TP3 (Tracking Error)**
(Al-Inner Tracking Off)
V: 500mV/div. H: 2msec/div.



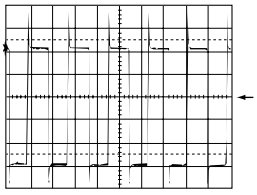
⑤ **IC2 - pin 39 (EFM before slice)**
V: 1V/div. H: 1µsec/div.



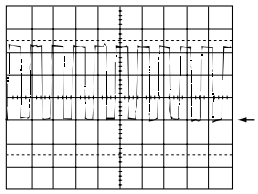
⑥ **IC2 - pin 1 (EFM)**
V: 1V/div. H: 0.2µsec/div.



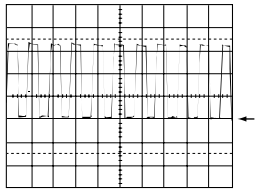
⑦ **IC3 - pin 41 (REGB)**
V: 1V/div. H: 5msec/div.



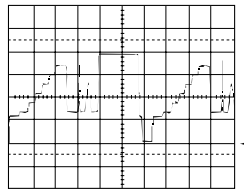
⑧ **Foot of R261 (FPWM)**
V: 1V/div. H: 5msec/div.



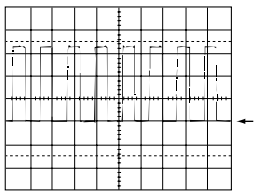
⑨ **Foot of R262 (VPWM)**
V: 1V/div. H: 5msec/div.



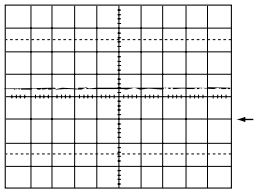
⑬ **IC18 - pin 39 (Y output)**
V: 0.2V/div. H: 5msec/div.



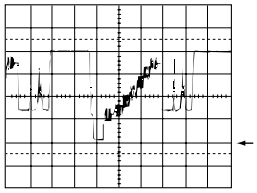
⑩ **Foot of R263 (PPWM)**
V: 1V/div. H: 5msec/div.



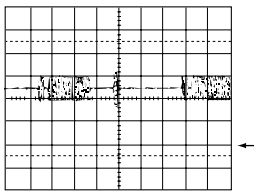
⑪ **Foot of R264 (RPWM)**
V: 1V/div. H: 5msec/div.



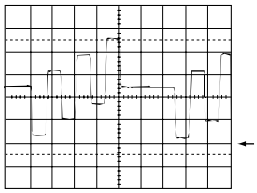
⑫ **IC18 - pin 45**
(Composite Video output)
V: 0.2V/div. H: 1msec/div.



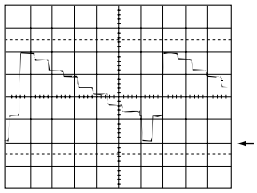
⑭ **IC18 - pin 36 (C output)**
V: 0.2V/div. H: 5msec/div.



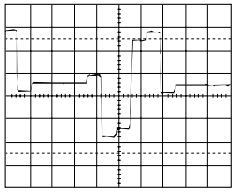
⑮ **IC18 - pin 45 (CB output when selecting color difference output)**
V: 0.2V/div. H: 5msec/div.



⑯ **IC18 - pin 39 (Y output when selecting color difference output)**
V: 0.2V/div. H: 5msec/div.

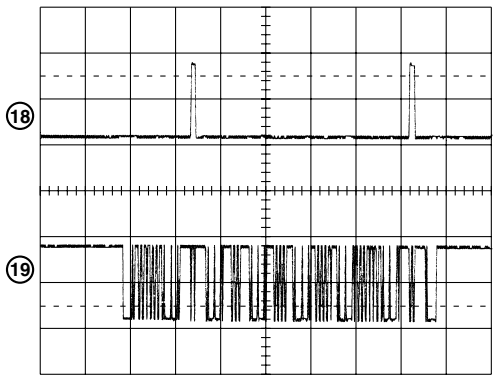


⑰ **IC18 - pin 36 (CR output when selecting color difference output)**
V: 0.2V/div. H: 5msec/div.

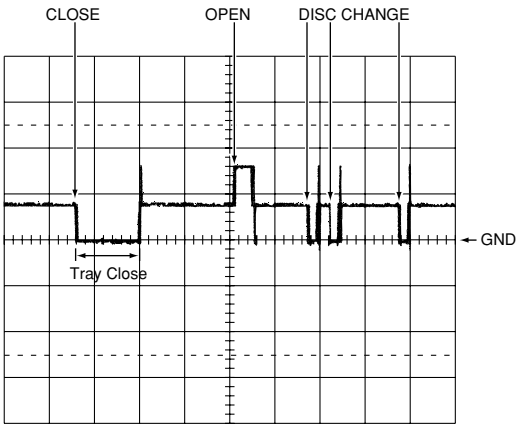


⑱ **CN55 - pin 5 (DISC SENS)**
V: 2V/div. H: 1sec/div.

⑲ **CN55 - pin 2 (TRAY POS)**
V: 2V/div. H: 1sec/div.



⑳ **CN55 - pin 4 (SED0)**
V: 2V/div. H: 5sec/div.



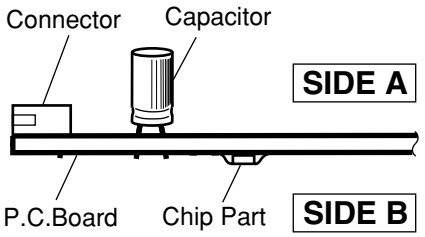
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

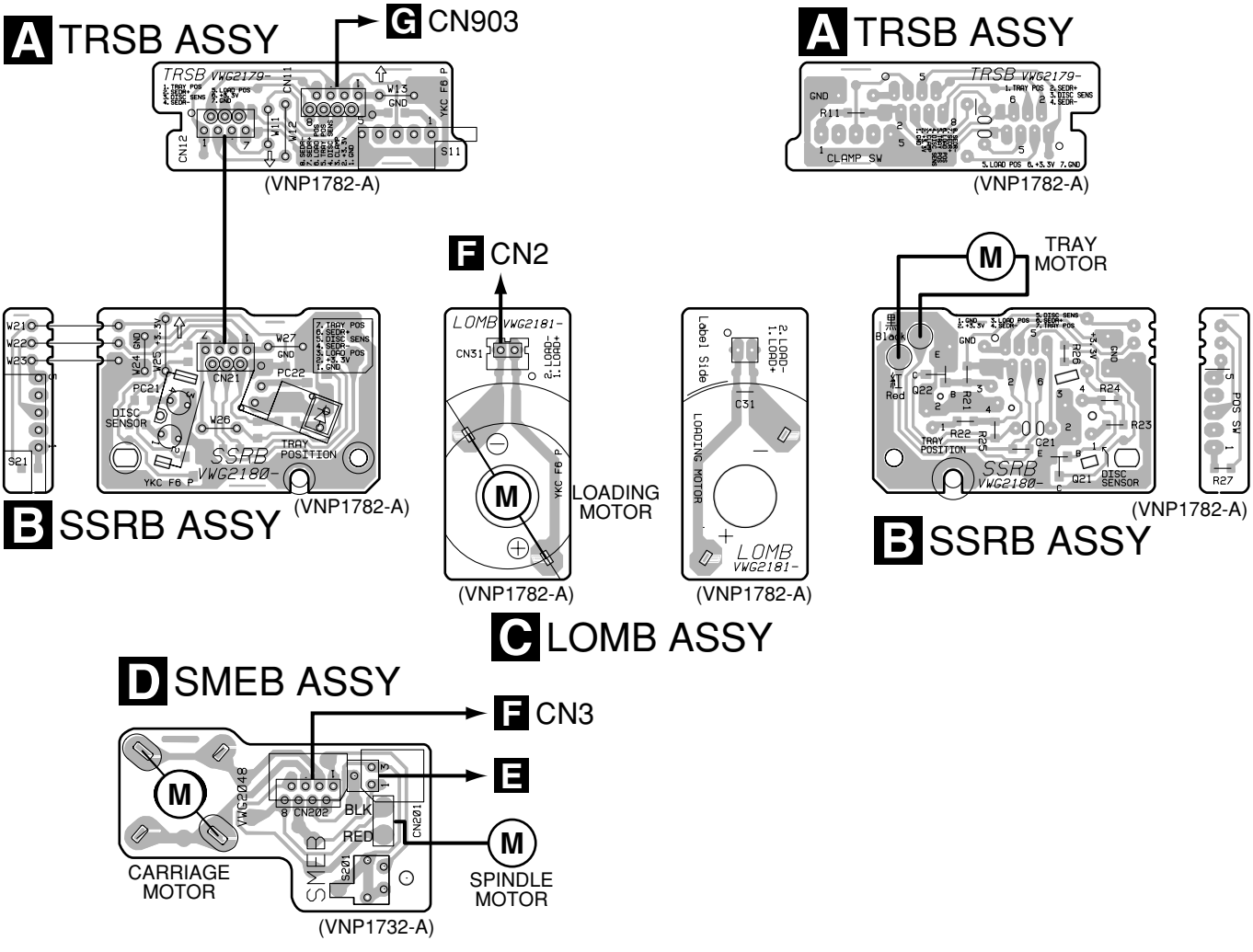
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



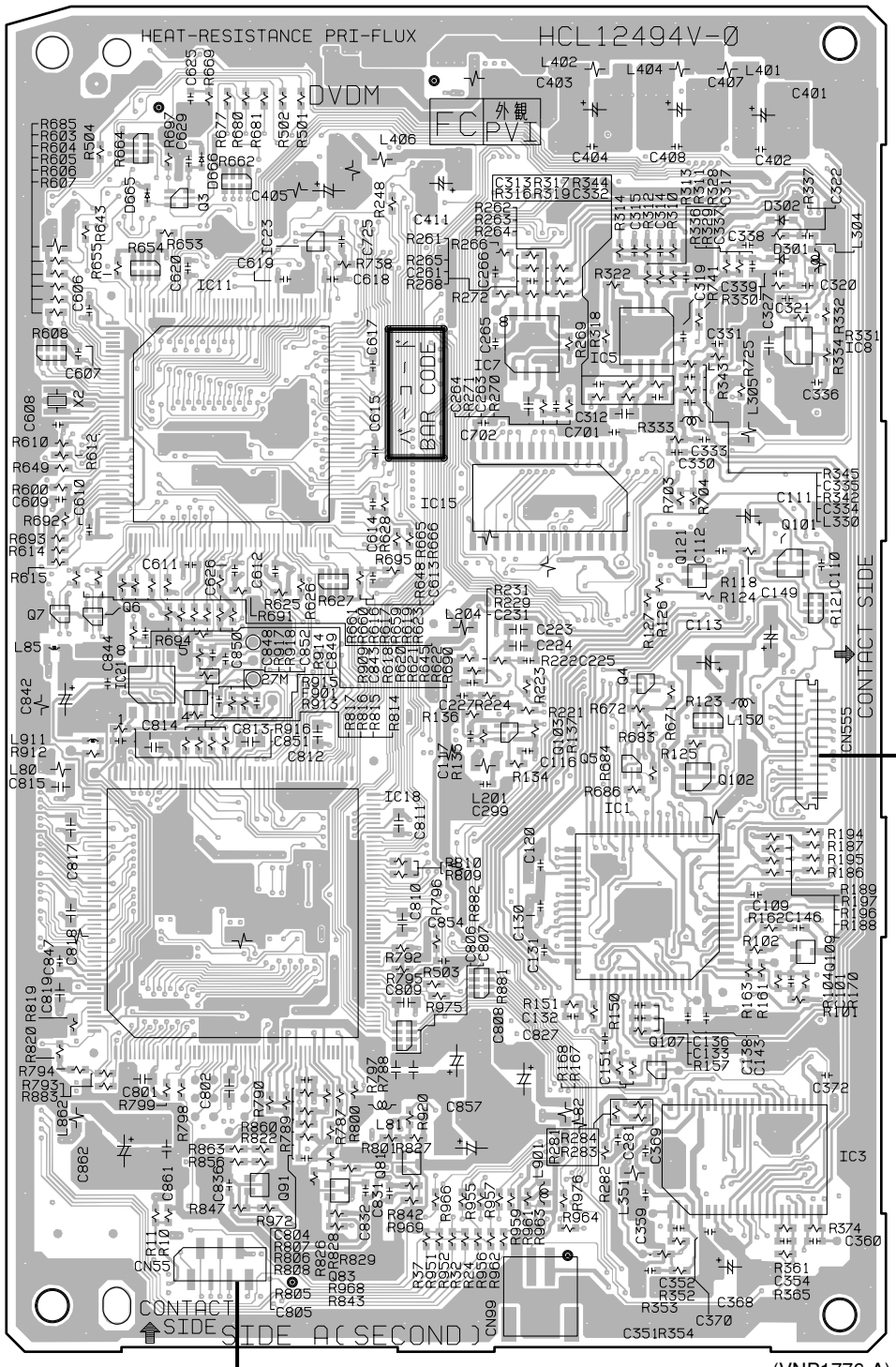
4.1 TRSB, SSRB, LOMB and SMEB ASSYS



4.2 DVDM ASSY

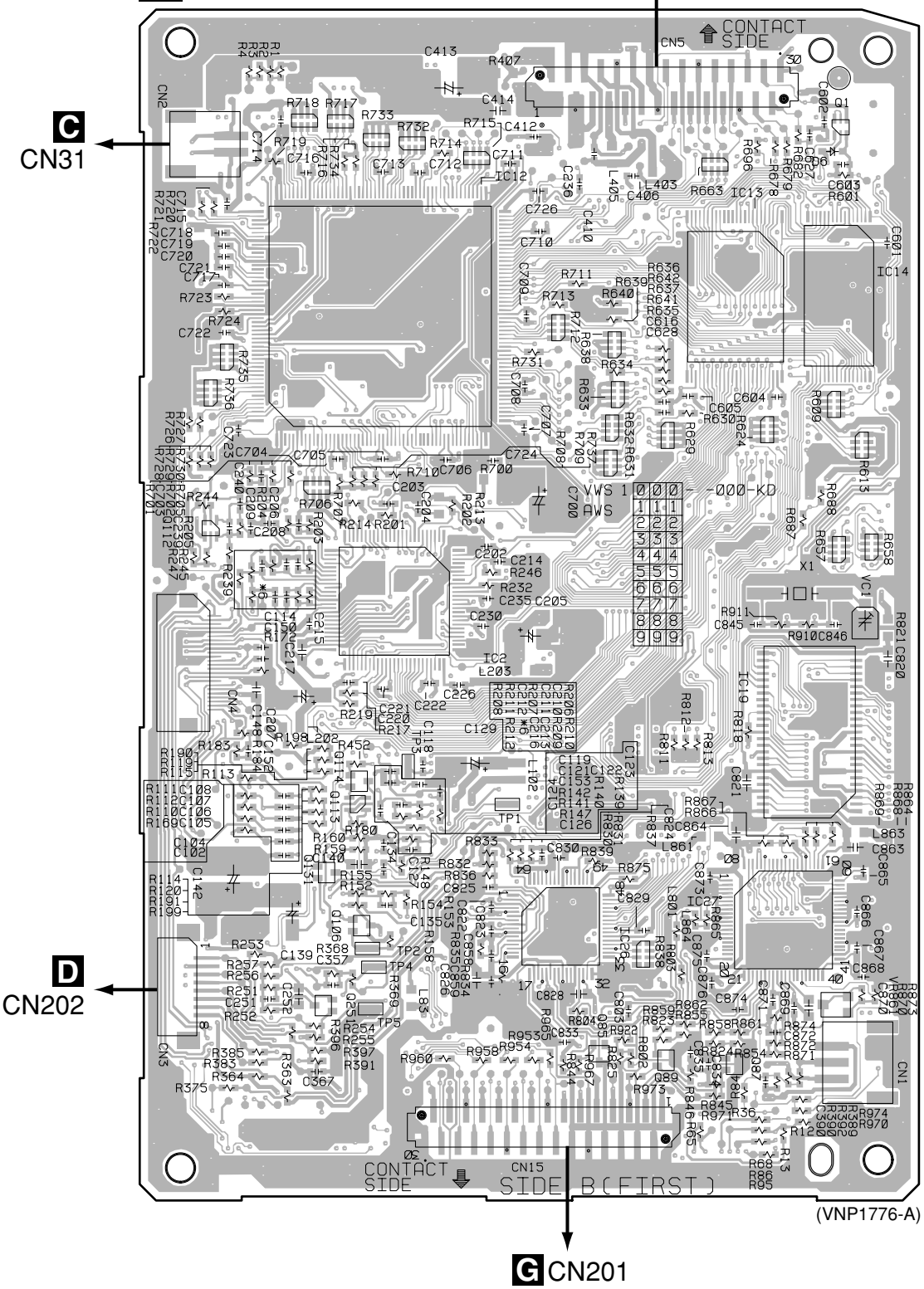
F DVDM ASSY

• This PCB is a four-layered board.



SIDE A

F DVDM ASSY



• This PCB is a four-layered board.

Q1

IC13 IC14
IC12

Q112

IC2

IC19

Q114
Q113

Q131

Q106 IC26 IC27

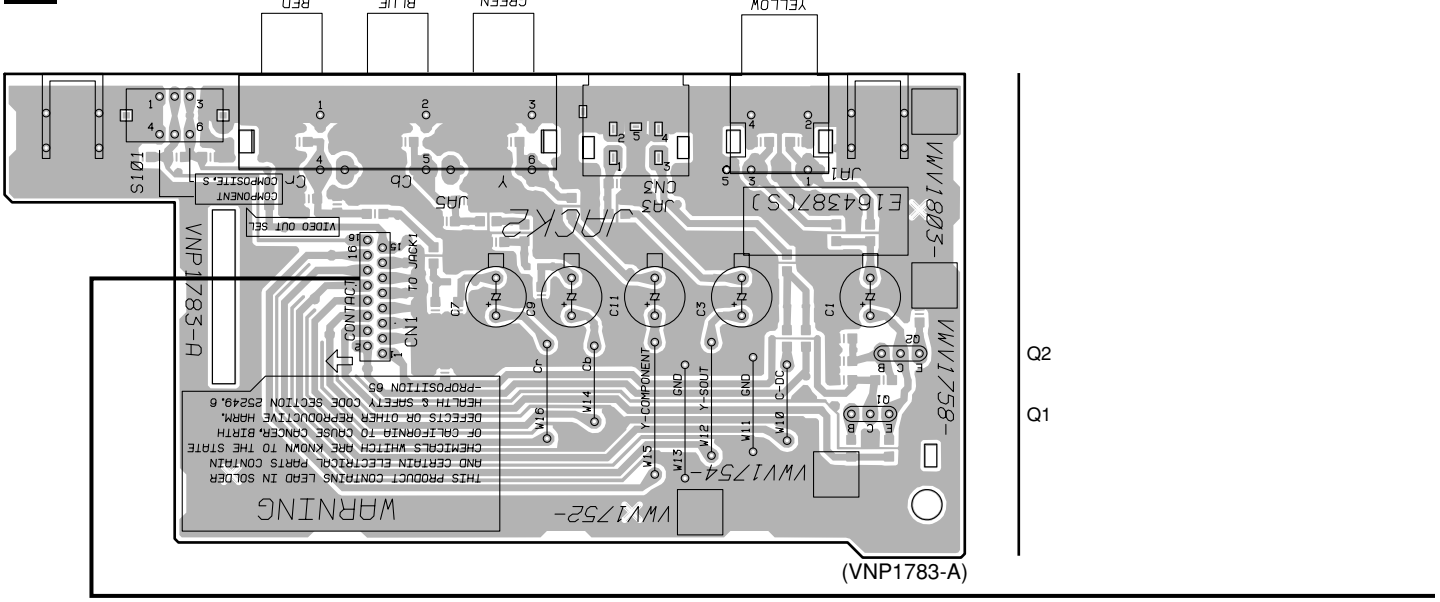
Q251

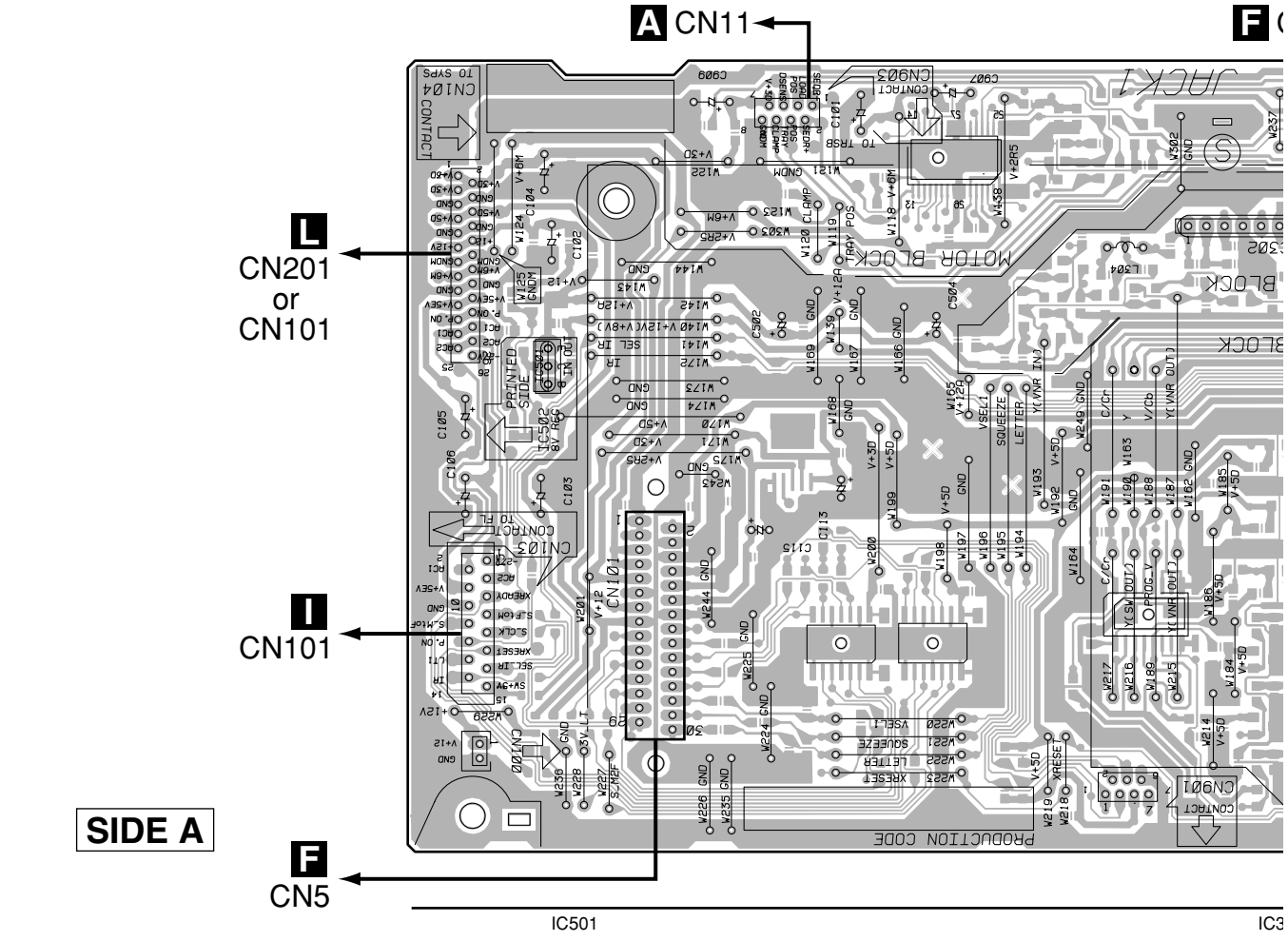
Q85 Q89 Q87

SIDE B

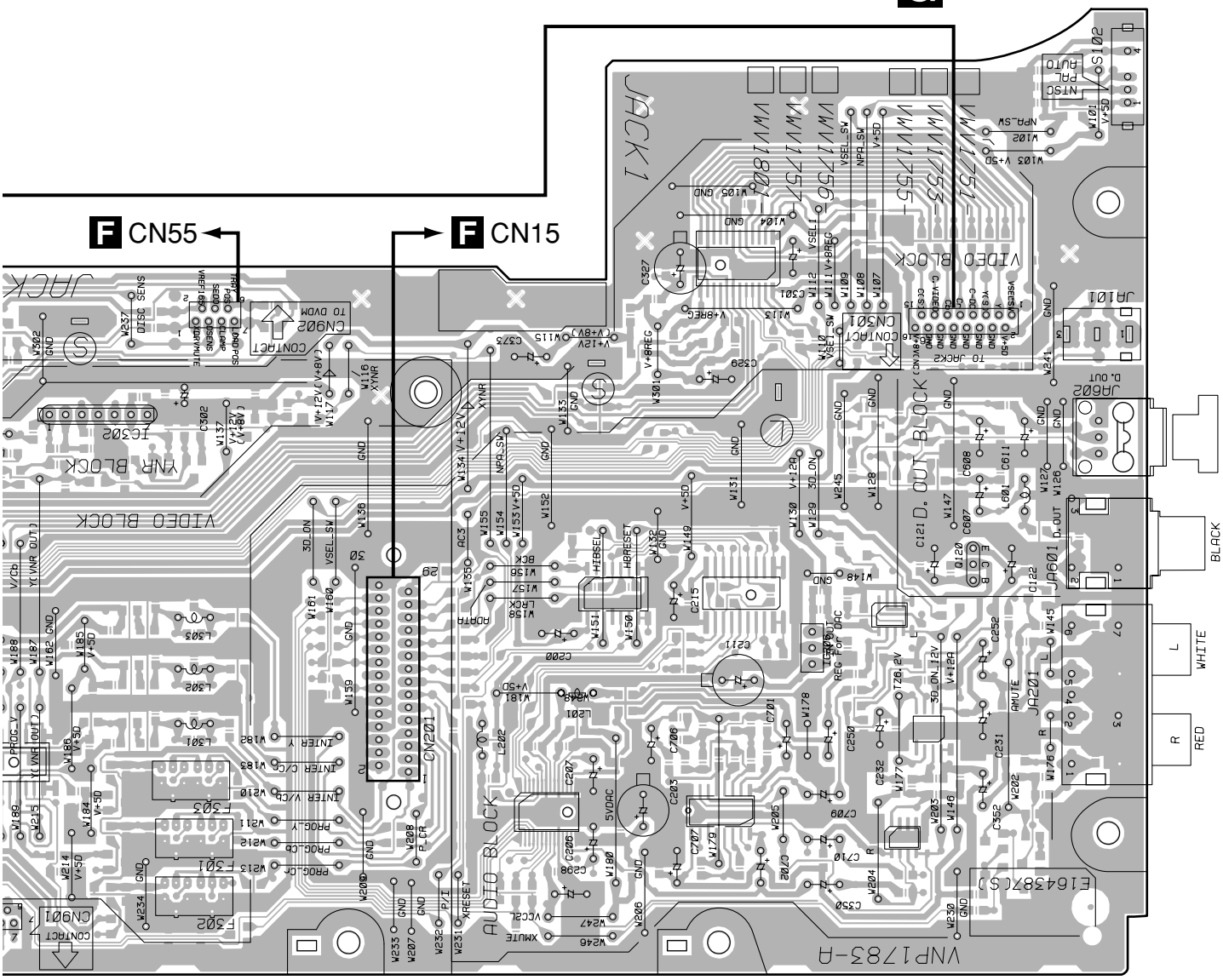
4.3 JAC1 and JAC2 ASSYS

H JAC2 ASSY



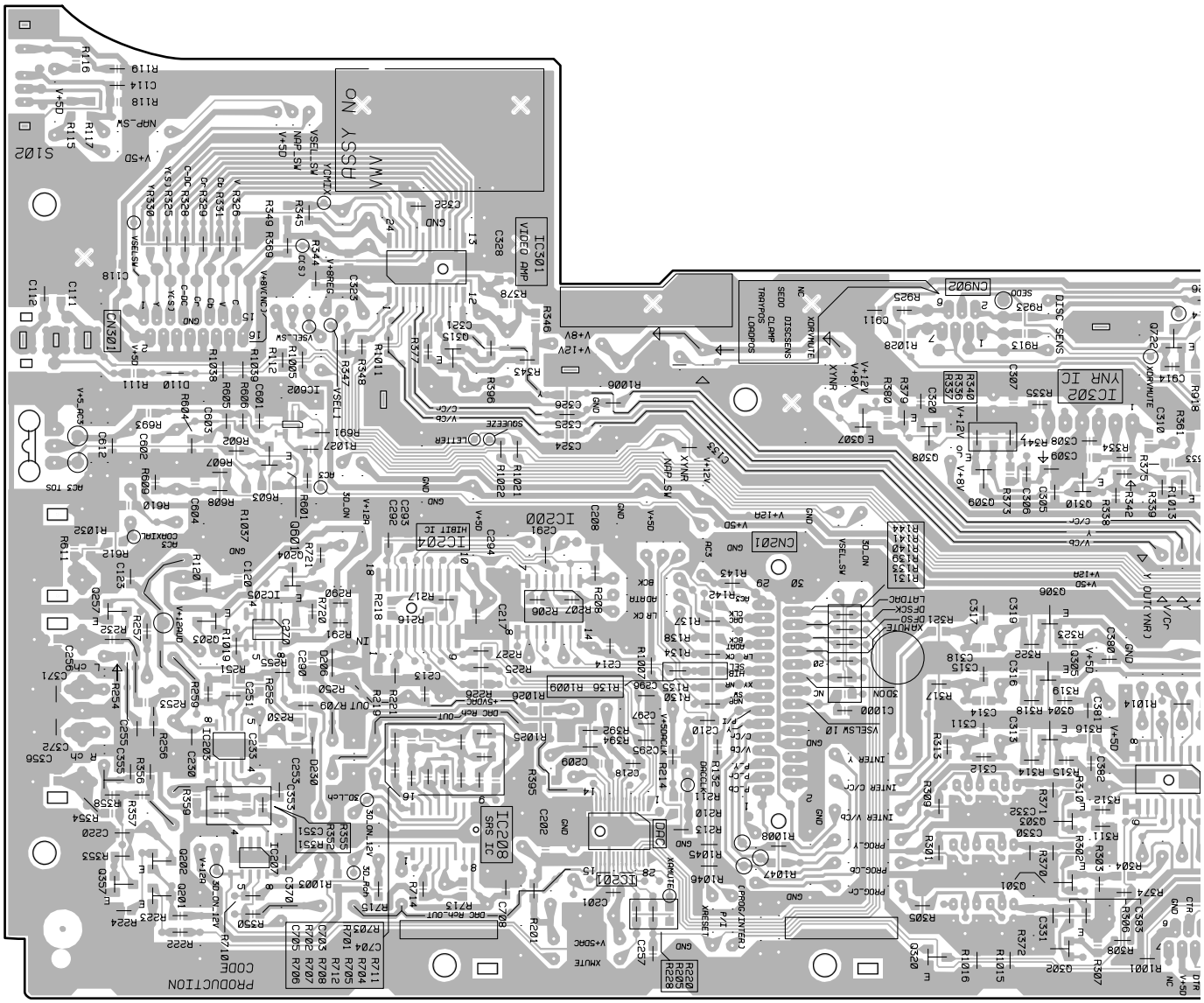


G JAC1 ASSY



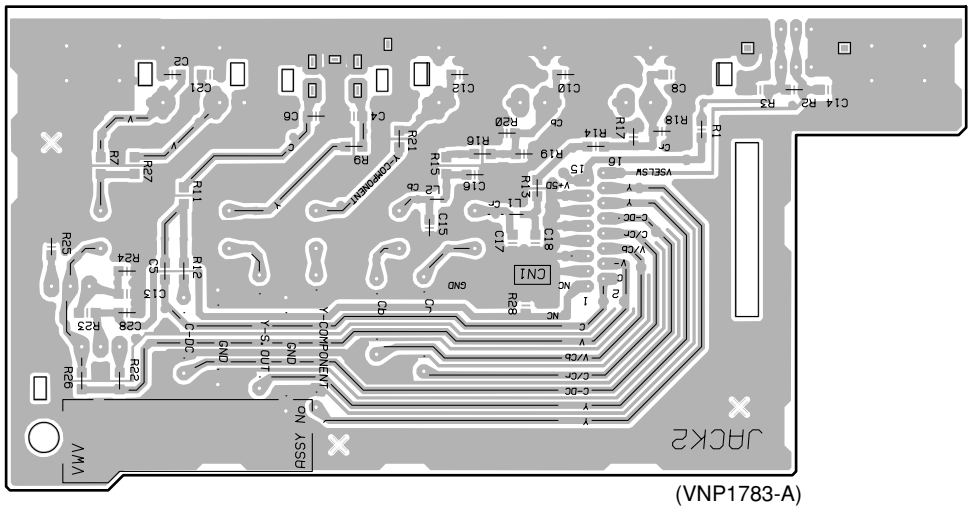
IC302 IC206 Q120

G JAC1 ASSY

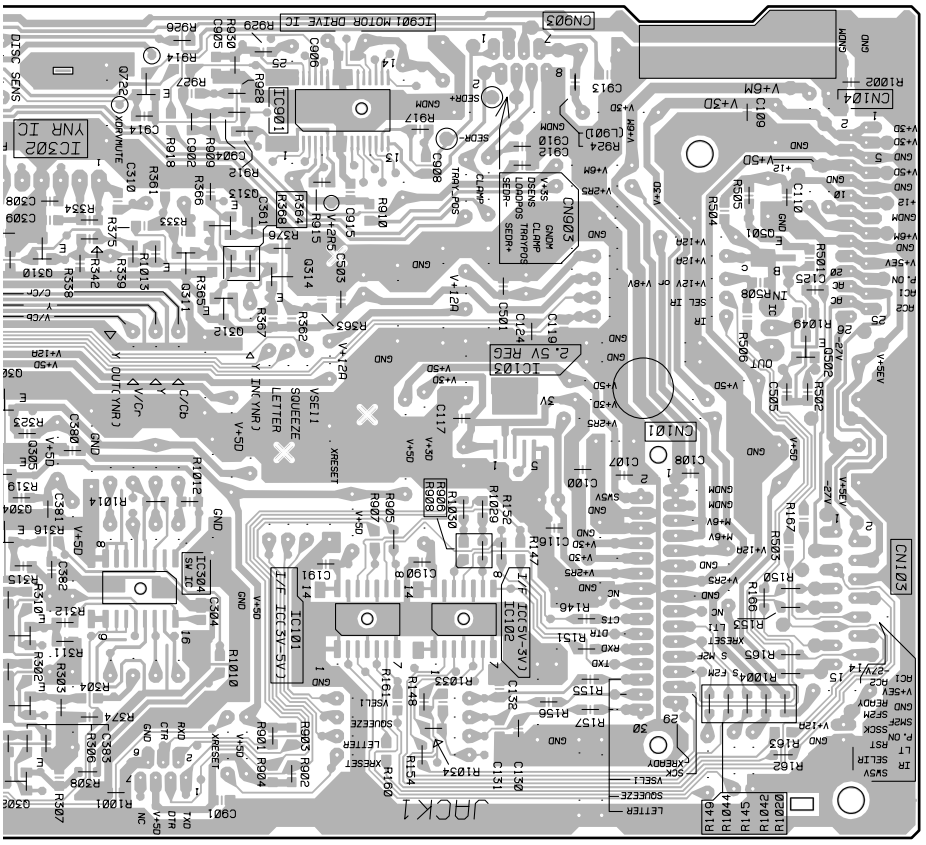


Q257 Q203 IC602 IC301 IC200 Q307-Q310 Q722
Q601 Q315 Q301-Q306
IC204 IC304
Q202 IC203 Q204 IC201
Q357 IC205 IC208
Q201 IC207

H JAC2 ASSY



(VNP1783-A)



(VNP1783-A)

SIDE B

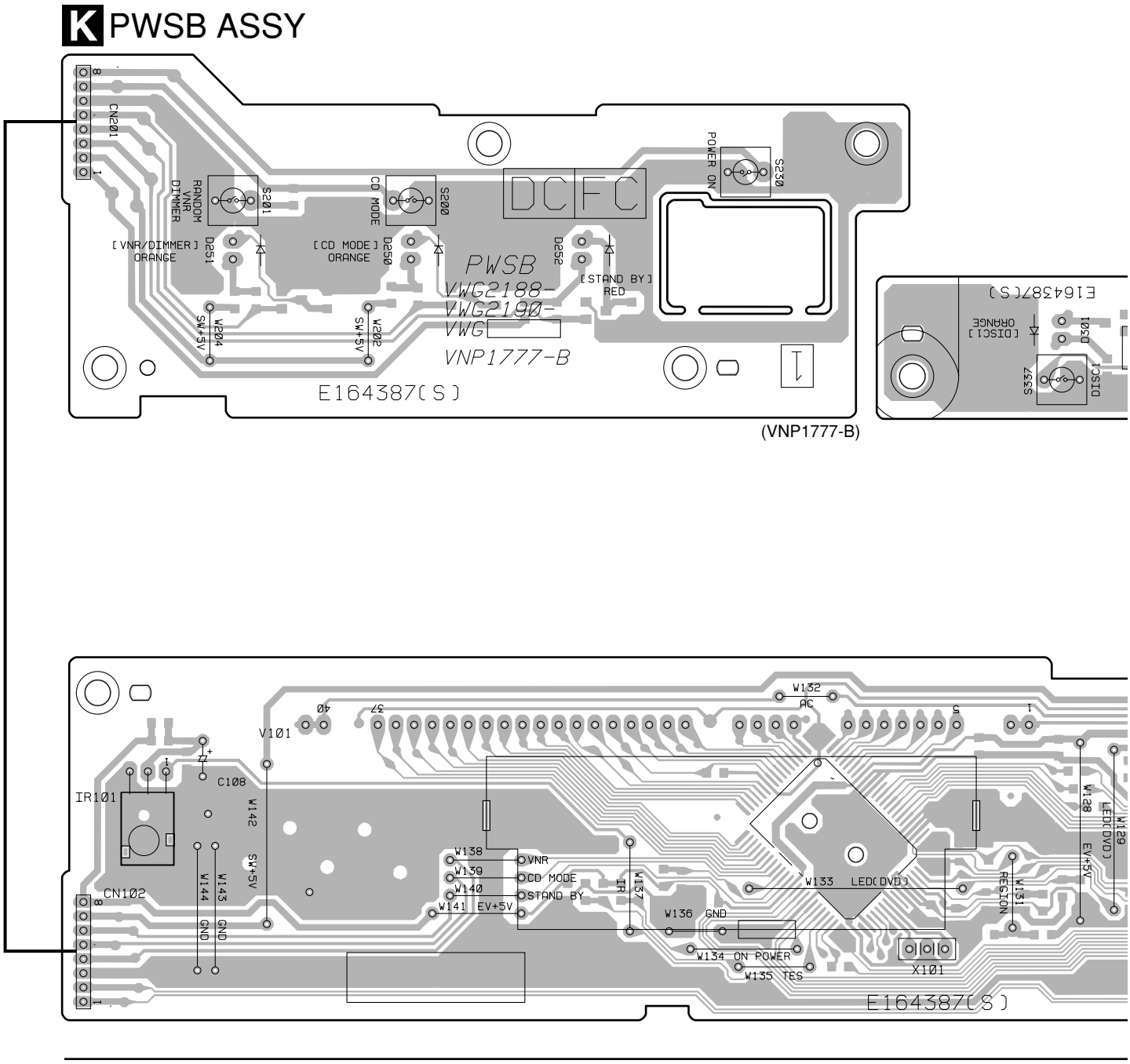
Q722

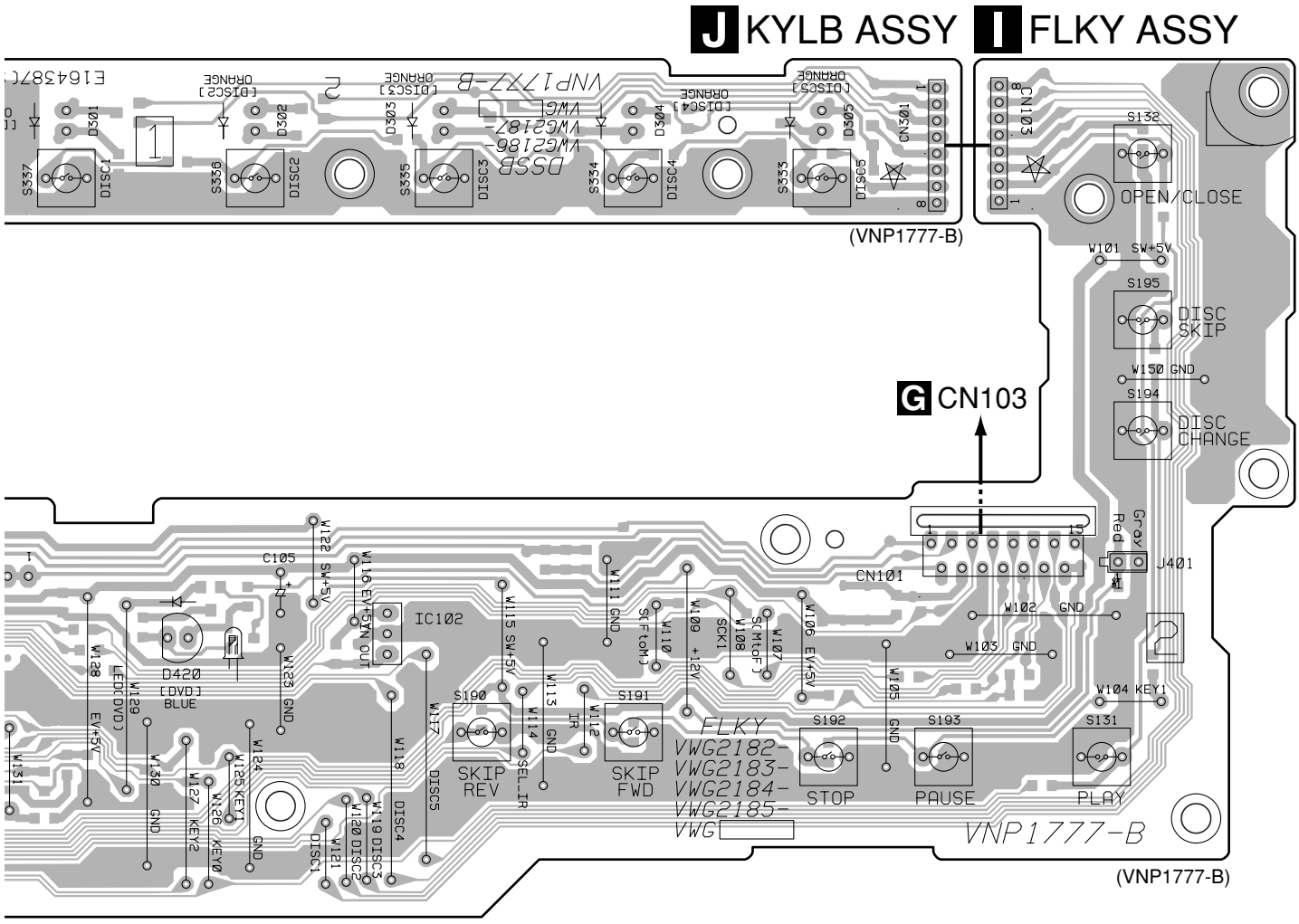
Q306 Q311-Q314 IC901 Q501 Q502

IC304

IC101 IC102

4.4 FLKY, KYLB and PWSB ASSYS



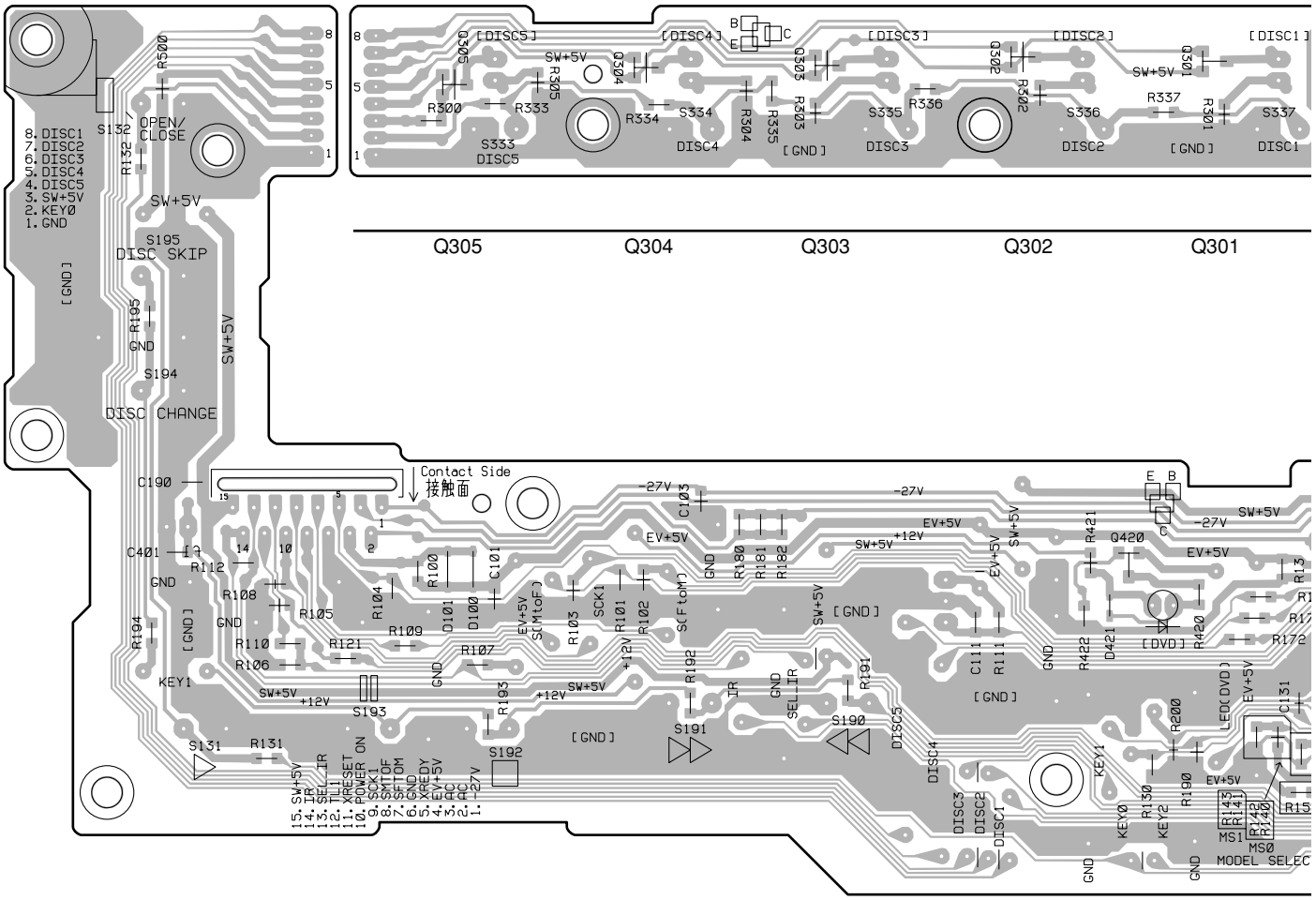

J KYLB ASSY
I FLKY ASSY
G CN103
(VNP1777-B)
(VNP1777-B)
OPEN/CLOSE
DISC SKIP
DISC CHANGE
SKIP REV
SKIP FWD
STOP
PAUSE
PLAY
IC102
CN101
CN301
CN103
J401
D420
[DVD] BLUE
FLKY
VWG2182-
VWG2183-
VWG2184-
VWG2185-
VWG
VNP1777-B

IC102

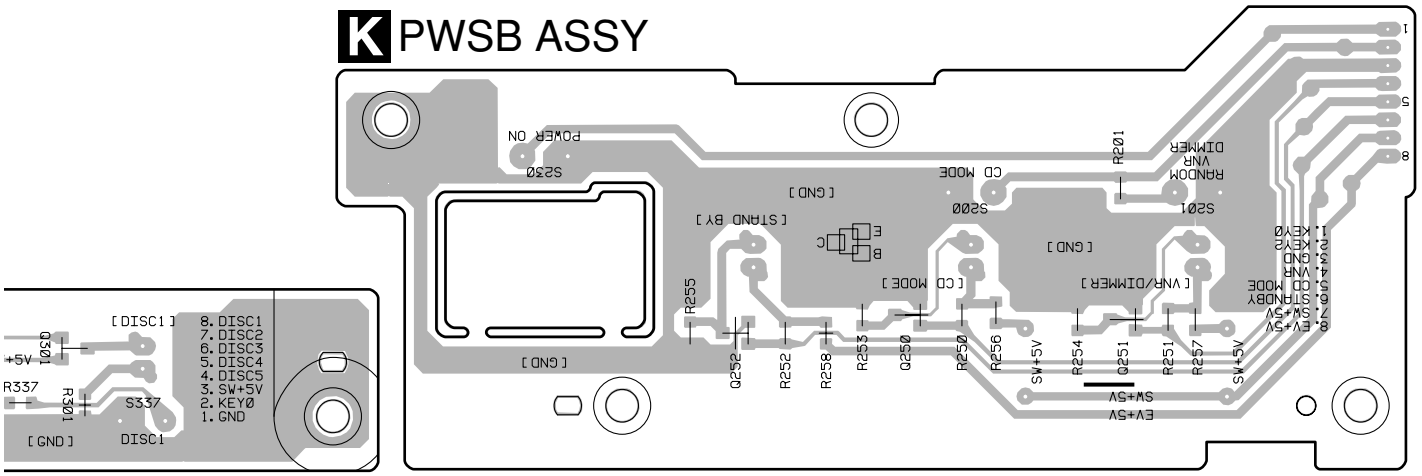
SIDE A

I FLKY ASSY

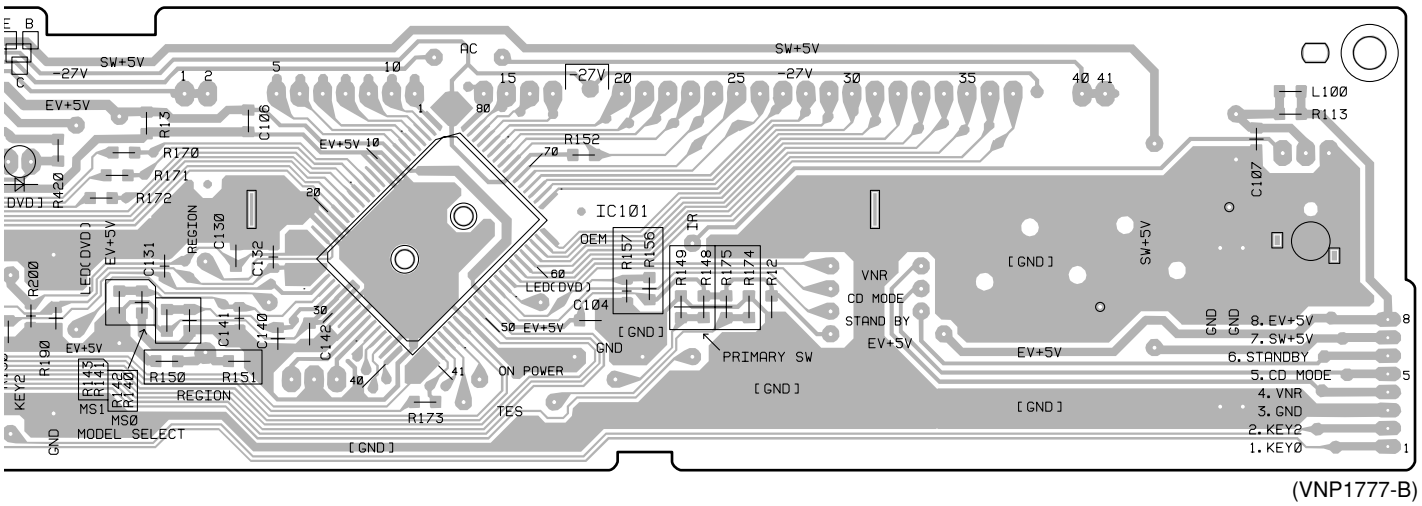
J KYLB ASSY



K PWSB ASSY



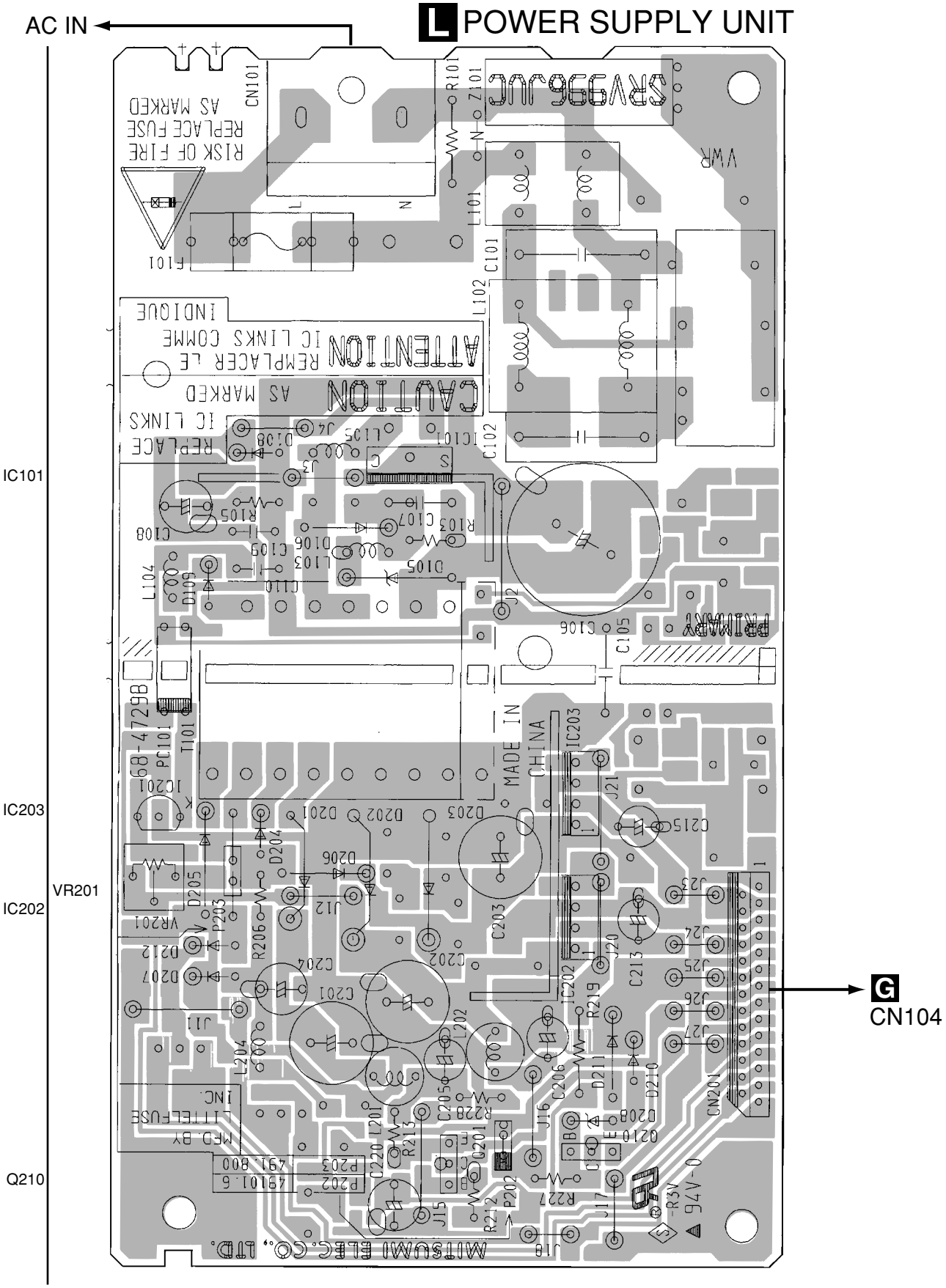
Q301 Q252 Q250 Q251



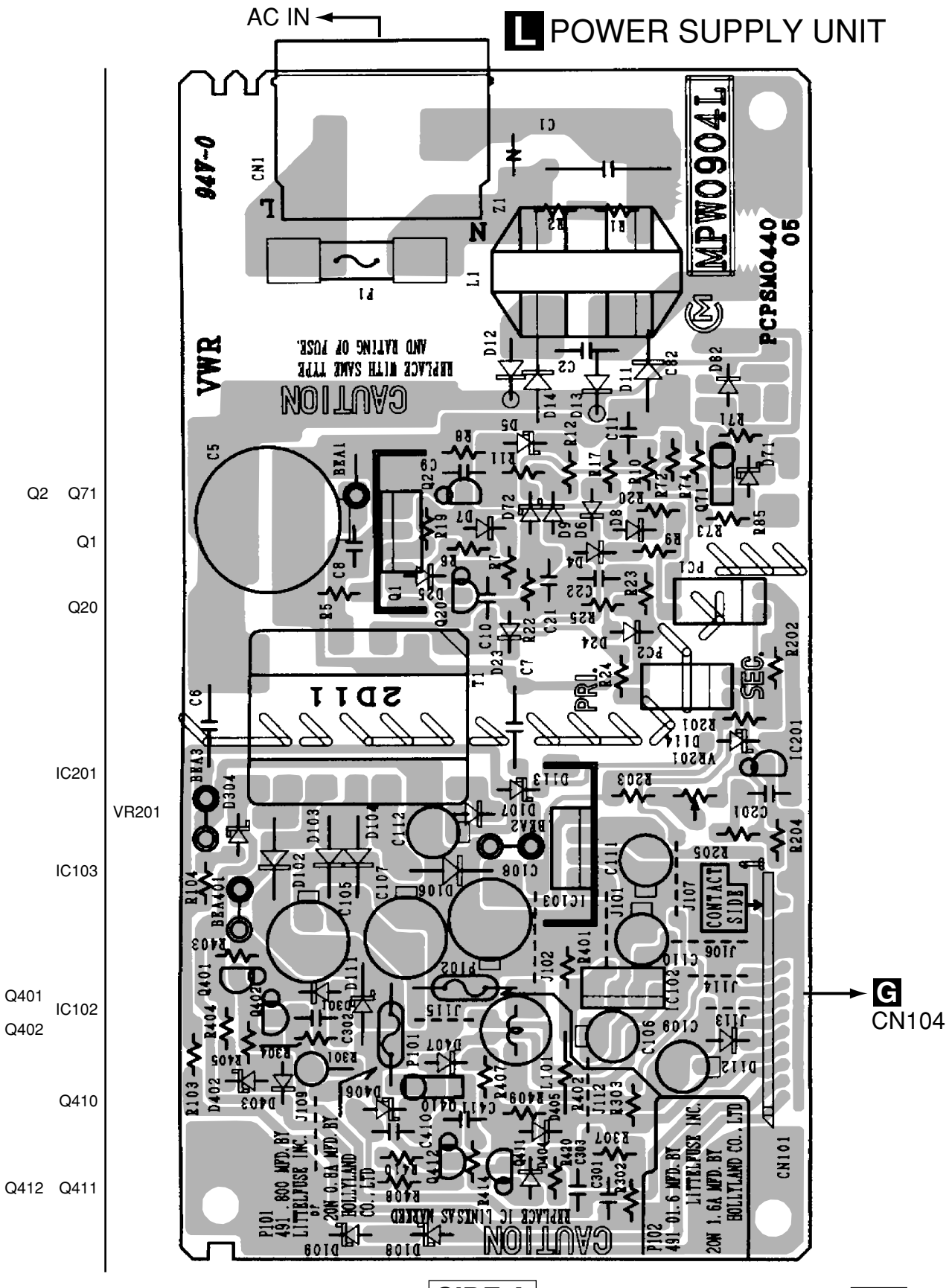
20 IC101

SIDE B

4.5 POWER SUPPLY UNIT (VWR1329)



4.6 POWER SUPPLY UNIT (VWR1332)



5. PCB PARTS LIST

NOTES: ●*Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
●*The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
●*When ordering resistors, first convert resistance values into code form as shown in the following examples.*
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).
560 Ω → 56 × 10¹ → 561 ..... RD1/4PU 5 6 1 J
47k Ω → 47 × 10³ → 473 ..... RD1/4PU 4 7 3 J
0.5 Ω → R50 ..... RN2H R 5 0 K
1 Ω → 1R0 ..... RS1P 1 R 0 K
Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
5.62k Ω → 562 × 10¹ → 5621 ..... RN1/4PC 5 6 2 1 F

■ LIST OF WHOLE PCB ASSEMBLIES

Mark	Symbol and Description	Part No.				Remarks
		KUXQ Type	KCXQ Type	RDXQ1/RA Type	RDXQ/RD Type	
NSP	5C Mechanism Base Assy	VWT1173	VWT1173	VWT1173	VWT1173	
NSP	├ MECB Assy	VWM1992	VWM1992	VWM1992	VWM1992	
NSP	│ ├ TRSB Assy	VWG2179	VWG2179	VWG2179	VWG2179	
NSP	│ ├ SSRB Assy	VWG2180	VWG2180	VWG2180	VWG2180	
NSP	│ └ LOMB Assy	VWG2181	VWG2181	VWG2181	VWG2181	
NSP	└ Traverse Mechanism Assy	VWT1161	VWT1161	VWT1161	VWT1161	
NSP	├ SMEB Assy	VWG2048	VWG2048	VWG2048	VWG2048	
NSP	└ FGSB Assy	VWG2009	VWG2009	VWG2009	VWG2009	
	DVDM Assy	VWS1429	VWS1429	VWS1429	VWS1429	
NSP	JKSB Assy	VWM2028	VWM2028	VWM2029	VWM2029	
	├ JAC1 Assy	VWV1751	VWV1751	VWV1753	VWV1753	
	└ JAC2 Assy	VWV1752	VWV1752	VWV1752	VWV1752	
NSP	FLKB Assy	VWM1995	VWM1995	VWM1996	VWM1996	
	├ FLKY Assy	VWG2182	VWG2182	VWG2183	VWG2183	
NSP	├ KYLB Assy	VWG2186	VWG2186	VWG2186	VWG2186	
NSP	└ PWSB Assy	VWG2188	VWG2188	VWG2188	VWG2188	
⚠	POWER SUPPLY Unit	VWR1329	VWR1329	VWR1332	VWR1332	

G JAC1 ASSY

VWV1751 and VWV1753 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		VWV1751	VWV1753	
	S102	Not used	VSH1020	
	R116	Not used	RS1/10S153J	
	R117	RS1/10S0R0J	Not used	
	R119	Not used	RS1/10S103J	

I FLKY ASSY

VWG2182 and VWG2183 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		VWG2182	VWG2183	
	R141	RS1/10S622J	RS1/10S273J	
	R143	RS1/10S363J	RS1/10S683J	

■ PCB PARTS LIST FOR DV-C503/KUXQ UNLESS OTHERWISE NOTED

Mark	No.	Description	Part No.
A		**TRSB ASSY**	
		SWITCH	
	S11		VSK1011
		RESISTOR	
	R11		RS1/10S0R0J
		OTHERS	
	CN12	8P FFC CONNECTOR	VKN1267
	CN11	7P FFC CONNECTOR	VKN1268
B		**SSRB ASSY**	
		SEMICONDUCTORS	
	Q21		2SC2412K
	Q22		DTC124EK
	PC21		GP2S28
	PC22		RPI-574
		SWITCH	
	S21		VSK1011
		CAPACITOR	
	C21		CKSQYF102Z50
		RESISTORS	
	All Resistors		RS1/10S□□□J
		OTHERS	
	CN21	7P FFC CONNECTOR	VKN1267
C		**LOMB ASSY**	
		CAPACITOR	
	C31		CKSQYF102Z50
		OTHERS	
	CN31	KR CONNECTOR	B2B-PH-K-S
D		**SMEB ASSY**	
		SWITCH	
	S201		DSG1016
		OTHERS	
	CN201	3P FFC CONNECTOR	52044-0345
	CN202	8P FFC CONNECTOR	VKN1212
		PC BOARD SMEB	VNP1732

Mark	No.	Description	Part No.
E		**FGSB ASSY**	
		SEMICONDUCTOR	
	PC101		GP2S60
		RESISTORS	
	R101		RS1/10S331J
F		**DVDM ASSY**	
		SEMICONDUCTORS	
	IC5,IC7		BA4510F
	IC21		CY2081SL-638
	IC1		LA9701M
	IC2		LC78652W
	IC3		M56788FP
	IC19		MB811171622A-100FN
	IC18		MB86373B
	IC15		MN414800CSJ-07
	IC11		PD3410A
	IC12		PE5108A
	IC14		TC55V1001AFT8
	IC8		TC7SHU04F
	IC13		VYW1702
	Q106,Q109,Q81,Q83,Q85		2SA1576A
	Q114,Q121,Q251		2SC4081
	Q131		DTC114EUA
	Q102		HN1A01F
	Q103,Q6,Q7		HN1B04FU
	Q101		HN1C01F
	Q112,Q113		HN1C01FU
	Q107,Q4,Q5		RN1902
	Q3		RN1911
	Q1		RN4982
	D301		KV1471E
	D6		RB501V-40
	D665,D666		RB521S-30
		COILS	
	L150,L330		LCYA100J2520
	L304		LCYA2R7J2520
	L81	CHIP COIL	VTL1067
	L85,L911	CHIP BEAD	VTL1084
		CAPACITORS	
	C123,C146,C613,C843		CCSRCH101J50
	C322		CCSRCH120J50
	C135		CCSRCH121J50
	C104-C108		CCSRCH150J50
	C206,C210,C211		CCSRCH151J50
	C333		CCSRCH180J50
	C116,C151,C314		CCSRCH220J50
	C152		CCSRCH221J50
	C127,C209,C337		CCSRCH331J50
	C134,C236		CCSRCH470J50

Mark	No.	Description	Part No.
	C122,C208		CCSRCH471J50
	C126,C335		CCSRCH560J50
	C334		CCSRCH5R0C50
	C124,C132		CCSRCH680J50
	C117,C240,C352,C360		CCSRCH681J25
	C845,C846		CCSRCK2R0C50
	C129,C142,C842		CEV101M10
	C113,C139		CEV220M16
	C405,C413,C700,C808		CEV221M4
	C111,C149,C205,C207,C401		CEV470M6R3
	C403,C407		CEV470M6R3
	C140,C223,C224,C252,C264		CKSQYB105K10
	C312		CKSQYB105K10
	C148,C217,C327,C414		CKSQYF105Z16
	C801,C802,C807,C809-C815		CKSQYF105Z16
	C817-C821		CKSQYF105Z16
	C216,C313		CKSRYB102K50
	C133,C136,C203,C220,C225		CKSRYB103K50
	C239,C320,C321,C603,C625		CKSRYB103K50
	C703,C711		CKSRYB103K50
	C101,C102,C114,C118,C119		CKSRYB104K16
	C121,C138,C204,C212,C213		CKSRYB104K16
	C227,C231,C263,C315,C317		CKSRYB104K16
	C332,C804		CKSRYB104K16
	C153,C266		CKSRYB223K25
	C357		CKSRYB223K50
	C354		CKSRYB332K50
	C214,C251,C261,C351		CKSRYB472K50
	C330		CKSRYB682K50
	C109,C110,C120,C130,C131		CKSRYF104Z16
	C143,C150,C202,C215		CKSRYF104Z16
	C221,C222,C226,C230,C235		CKSRYF104Z16
	C265,C299,C319,C359,C367		CKSRYF104Z16
	C369,C370,C402,C404,C406		CKSRYF104Z16
	C408,C410,C412,C601,C602		CKSRYF104Z16
	C604-C612,C614,C615		CKSRYF104Z16
	C617-C620,C626,C701,C702		CKSRYF104Z16
	C704-C710,C712-C724,C726		CKSRYF104Z16
	C831-C833,C844		CKSRYF104Z16
	C112		CKSRYF105Z10
	C368,C411 (47μF/16V)		VCH1166

RESISTORS

	R123 (39Ω)	ACN7047
	R732,R733,R735,R736 (47kΩ)	ACN7077
	R632 (100Ω)	DCN1092
	R608,R609,R613,R624,R627 (10kΩ)	DCN1094
	R629,R631,R633,R638,R654 (10kΩ)	DCN1094
	R657,R658,R664,R706 (10kΩ)	DCN1094
	R717,R718 (10kΩ)	DCN1094
	R121,R663 (22Ω)	DCN1104
	R712,R715,R881 (0Ω)	DCN1106
	R1020,R2010,R2020,R2030,R2040	RS1/10S0R0J
	R3050,R4010,R4020,R4030,R4040	RS1/10S0R0J
	R4050,R4060,R407,R685,R722	RS1/10S0R0J
	R8000,R821	RS1/10S0R0J
	R202,R3510	RS1/10S101J
	R700	RS1/10S1R2J
	R807	RS1/16S1201F
	R806	RS1/16S1501F
	R363,R365	RS1/16S1503F
	R825-R827	RS1/16S2000F
	R805	RS1/16S2701F

Mark	No.	Description	Part No.
	R361,R364		RS1/16S7502F
	Other Resistors		RS1/16S□□□J

OTHERS

	X2	CHIP CERALOCK (20MHz)	DSS1110
	CN2	PH CONNECTOR	S2B-PH-SM3
		FLEXIBLE CABLE (07P)	VDA1681
	CN555	24P FFC CONNECTOR	VKN1464
	CN55	07P FFC CONNECTOR	VKN1493
	CN15,CN5	B TO B CONNECTOR 30P	VKN1626
	CN3	8P FFC CONNECTOR	VKN1763
	X1	CRYSTAL RESONATOR (13.824MHz)	VSS1148

G JAC1 ASSY

SEMICONDUCTORS

	IC203	BA4560F
	IC901	BA6195FP
	IC301	LA7138M
	IC206	NJM78L05A
	IC201	PCM1716E
	IC103	PQ025EZ5MZP
	IC102	TC74VHC125F
	IC101	TC74VHCT125AF
	Q202,Q304-Q306,Q315	2SA1037K
	Q120	2SC1740S
	Q601	2SC2412K
	Q257,Q357	2SD2114K
	Q201,Q722	DTC114YK
	D110	MA111
	D230	UDZS6.2B

COILS

	L301-L303		LAU120J-TA
	L202		LAU1R8J-TA
	L601	NOISE FILTER	RTF1167

CAPACITORS

	C257	CCSQCH101J50
	C313,C316,C319	CCSQCH180J50
	C253,C353	CCSQCH221J50
	C251,C351	CCSQCH330J50
	C255,C256,C355,C356	CCSQCH331J50
	C111	CCSQCH470J50
	C311,C312,C314,C315	CCSQCH6R0D50
	C317,C318	CCSQCH6R0D50
	C113,C115	CEAL101M6R3
	C502,C504	CEAL470M16
	C101,C103-C105,C211,C608	CEAT101M10
	C611,C907,C909	CEAT101M10
	C102,C121,C122,C231,C232	CEAT101M16
	C301,C327,C373	CEAT101M16
	C203	CEAT102M6R3
	C607	CEAT1R0M50
	C106	CEAT220M35
	C206,C207,C250,C350	CEAT470M16
	C252,C352	CEAT470M25
	C324-C326	CKSQYB104K25

Mark	No.	Description	Part No.
	C130-C132		CKSQYF102Z50
	C902,C908		CKSQYF103Z50
	C100,C107-C110,C112,C114		CKSQYF104Z25
	C116,C117,C120,C123		CKSQYF104Z25
	C190,C191,C201,C202,C209		CKSQYF104Z25
	C213,C218,C230,C233,C290		CKSQYF104Z25
	C321-C323,C328,C501,C503		CKSQYF104Z25
	C601,C602,C612,C901		CKSQYF104Z25
	C905,C906,C915		CKSQYF104Z25
	C210		CKSQYF105Z16
RESISTORS			
	R250,R350		RN1/10SE1602D
	R251,R351		RN1/10SE2702D
	R259,R359		RN1/10SE3901D
	R930		RS1/10S1002F
	R909		RS1/10S1502F
	R914,R928		RS1/10S2402F
	R927		RS1/10S2701F
	R929		RS1/10S5601F
	R313,R317,R321		RS1/10S8200D
	Other Resistors		RS1/10S□□□J
OTHERS			
		PCB BINDER	DEF1012
	JA602	OPTICAL LINK OUT	GP1FA550TZ
	CN103	FFC CONNECTOR 15P	HLEM15S-1
	JA101	REMOTE CONTROL JACK	RKN1004
		PCB BINDER	VEF1040
	JA201	4P PIN JACK	VKB1128
	JA601	1P PIN JACK (BLK, NI)	VKB1159
	CN902	7P FFC CONNECTOR	VKN1238
	CN903	8P FFC CONNECTOR	VKN1239
	CN301	16P FFC CONNECTOR	VKN1247
	CN104	26P FFC CONNECTOR	VKN1257
	CN901	7P FFC CONNECTOR	VKN1267
	CN101,CN201		VKN1765
		B TO B CONNECTOR 30P	

H JAC2 ASSY

COILS			
	L1,L2	CHIP BEAD	VTL1089
SWITCH			
	S101		VSH1009
CAPACITORS			
	C1,C11,C3,C7,C9		CEAT471M6R3
	C14,C5		CKSQYF104Z25
RESISTORS			
	R13,R15		RS1/10S1100D
	R17,R19		RS1/10S3300D
	R18,R20		RS1/10S4700D
	R11,R21,R7,R9		RS1/10S62R0D
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN3	4P MINI DIN SOCKET	AKP7008
	JA1	1P PIN JACK	VKB1122
	JA5	3P PIN JACK	VKB1150
	CN1	16P FFC CONNECTOR	VKN1247
		SCREW TERMINAL	VNE1948

Mark	No.	Description	Part No.

I FLKY ASSY

SEMICONDUCTORS			
	IC101		PE5185A
	IC102		S-806D
SWITCHES			
	S131,S132,S190-S195		ASG7013
CAPACITORS			
	C105		CEJQ470M10
	C111		CKSQYB102K50
	C103,C104,C106,C107,C142		CKSQYF104Z50
RESISTORS			
	R130,R190,R200		RS1/10S1001D
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN102,CN103		08P-FJ
		FJ CONNECTOR 8P	
	CN101		52492-1520
		FFC BOTTOM CONNECTOR 15P	
		REMOTE RECEIVER UNIT	GP1U28X
	V101	FL TUBE	VAW1058
		SPACER	VEC1599
		FL HOLDER	VNF1096
	X101	CERAMIC RESONATOR (5MHz)	VSS1142

J KYLB ASSY

SWITCHES			
	S333-S337		ASG7013
RESISTORS			
	All Resistors		RS1/10S□□□J
OTHERS			
	CN301	FJ CONNECTOR 8P	08R-FJ

K PWSB ASSY

SEMICONDUCTORS			
	Q250		DTC124EK
	D250		SLR-343DC(NPQ)
SWITCHES			
	S200,S201,S230		ASG7013
RESISTORS			
	All Resistors		RS1/10S□□□J
OTHERS			
	CN201	FJ CONNECTOR 8P	08R-FJ

Mark	No.	Description	Part No.

L POWER SUPPLY UNIT (VWR1329)

OTHERS

⚠	P202	PROTECTOR (1.6A)	AEK7012
⚠	P203	PROTECTOR (800mA)	AEK7063
⚠	F101	FUSE (2A)	REK1078

L POWER SUPPLY UNIT (VWR1332)

OTHERS

⚠	P101	PROTECTOR (800mA)	AEK7063
⚠	P102	PROTECTOR (1.6A)	AEK7066
⚠	F101	FUSE (2.5A)	REK1102

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 SELF-DIAGNOSTIC FUNCTION OF PICKUP DEFECTIVE

Symptom

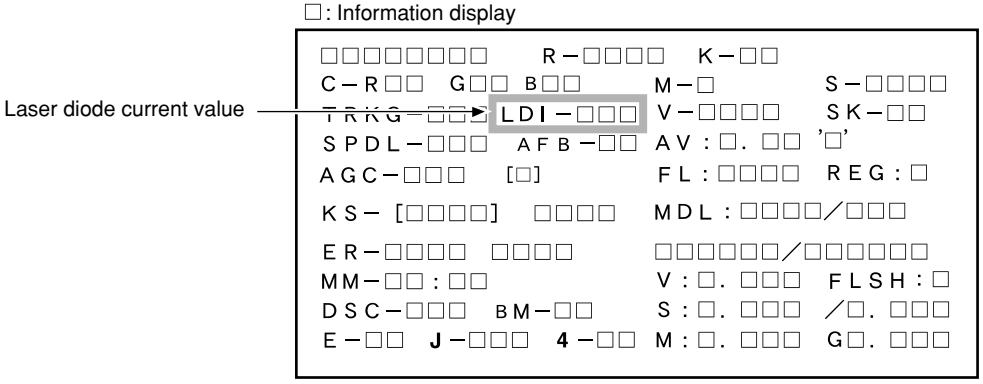
- Indicates "No Disc" in FL display.
- Player does not playback, etc..

Procedure of Self-Diagnosis

① Press the TEST → 1 buttons (of the test mode remote control unit : GGF1067) in the test mode screen, and turn on the laser diode (It light-up for nine seconds.).
② Confirm the indicated value of the laser diode current (LDI).
③ When indicated value is more than 110, pickup is defective. → Release the Traverse Mechanism Assy.

Note : When a DVD disc is played in the test mode, this function is effective.
This function is effective only for DVD pickup (650nm).

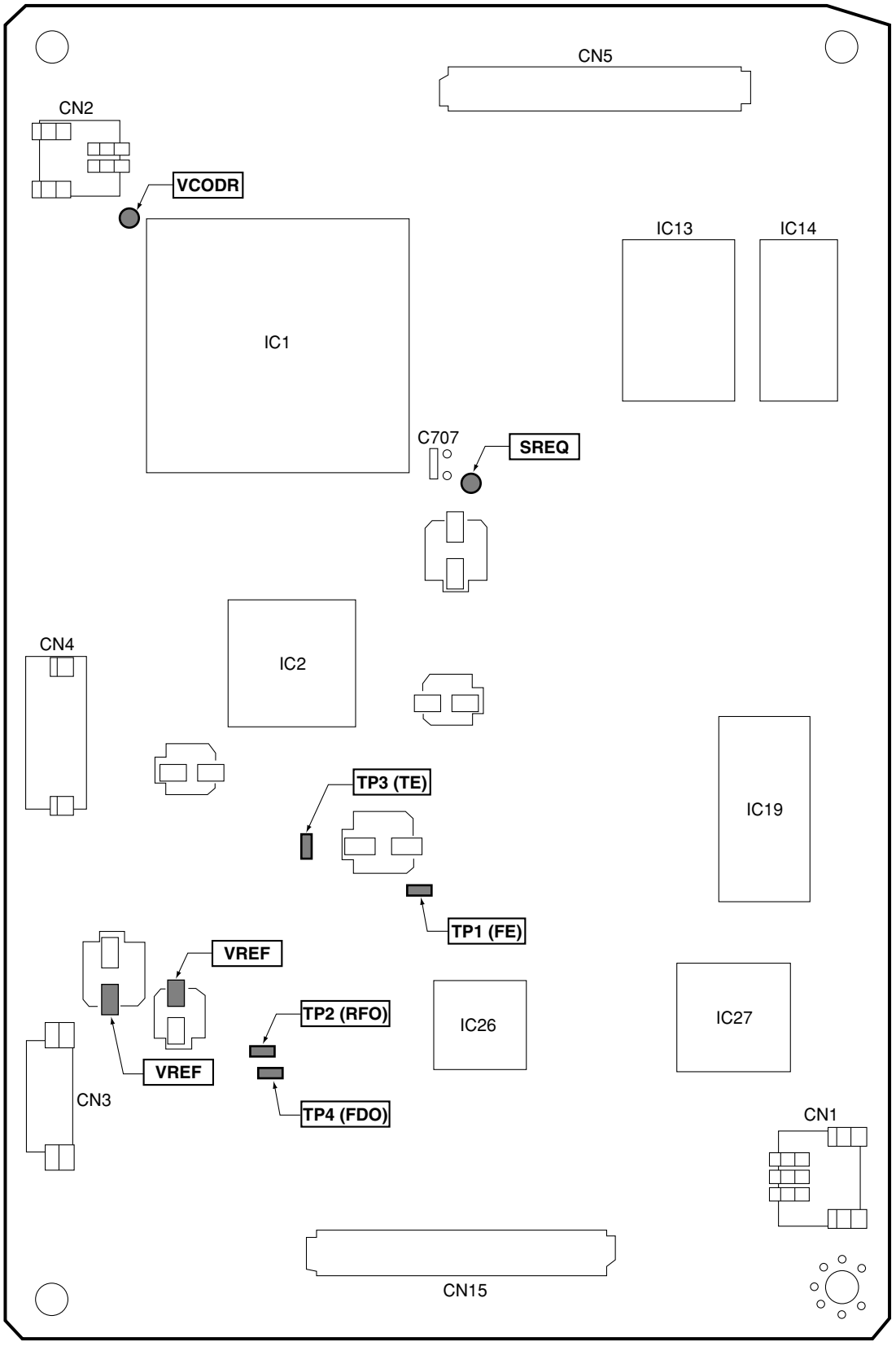
Character in bold : Item name
□: Information display



Test Mode Screen Display

7.1.2 TEST POINTS LOCATION

DVDM ASSY



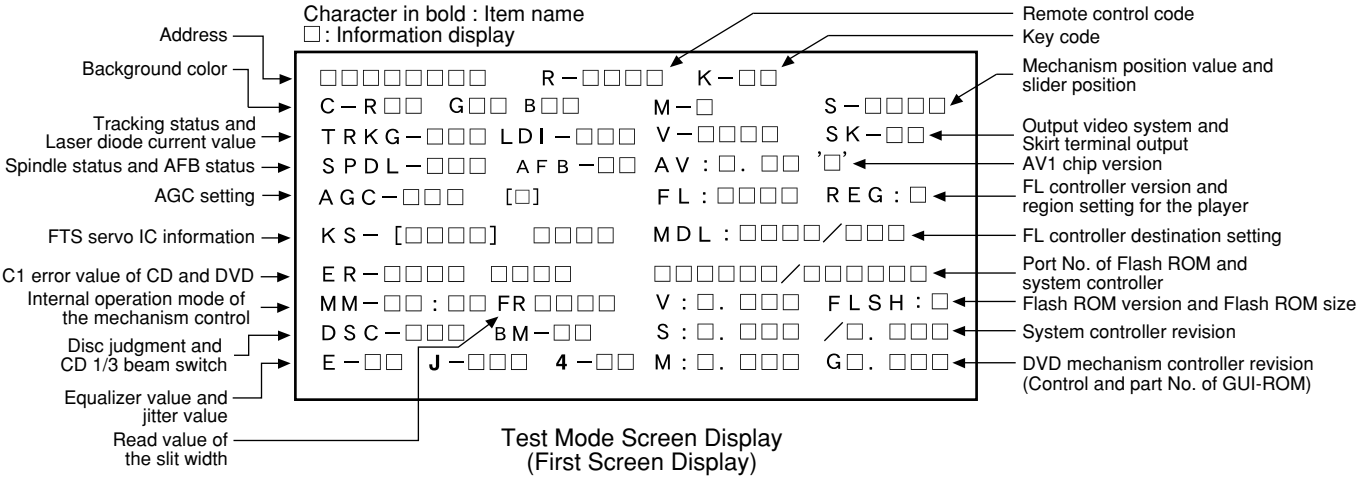
SIDE B

7.1.3 TEST MODE SCREEN DISPLAY

■ TEST MODE SCREEN DISPLAY

Consecutive double-OSD display is supported during test mode. The screen is composed 10 lines with a maximum of 32 characters per line. It can't be used with the debugging display mode together.

• Screen Composition



Test Mode Screen Display
(First Screen Display)

Caution :
The first screen and second screen switch by pressing [DISPLAY] key of the remote control unit.
It is only a version display part on the lower right of the screen those contents of display change.
ATB : ON/OFF information display and AGC manual setting display deleted with the second generation.
The displays of Tilt error value, Tilt servo status and pickup DVD/CLD display deleted with the third generation becomes LD part is deleted.

• Description of Each Item on the Display

(1) Address indication

The address being traced is displayed in number.
DVD : ID indication (hexadecimal number, 8 digits) [＊＊＊＊＊＊＊＊]
CD : A-TIME (min. sec.) [0 0 0 0 ＊＊＊＊]
(Note : For DVDs, decimal-number indication is possible.)

(2) Code indication of the remote control unit [R – ＊＊＊＊]

The code for the key pressed on the remote control unit, which is received by the FL controller, is displayed while the key is pressed. In the case of the double code, the second code will be displayed.

(3) Key code indication for the main unit [K – ＊＊]

The code for the key pressed on the main unit, which is received by the system controller, is displayed while the key is pressed.

(4) Background color indication [C – R＊＊ G＊＊ B＊＊]

(5) ① Tracking status [TRKG – ＊＊＊]

Tracking on [ON]
Tracking off [OFF]

② Laser diode current value [LDI – ＊＊＊]

(6) ① Spindle status [SPDL – ＊＊＊]

Spindle accelerator and brake, free-runnimg	[A/B]
FG servo	[FG]
Rough, velocity phase servo	[SRV]
Offset addition, rough, velocity phase servo	[O_S]

② AFB status [AFB – ＊＊]

ON	[ON]
OFF	[OFF]

(7) Mechanism position value [M – ＊]

Position code	[1] to [3]

(8) Slider position [S – ＊＊＊＊]

CD TOC area	[IN]
CD active area	[CD]

(9) AGC setting [AGC – ＊＊]

AGC on	[AGC-ON]
AGC off	[AGC-OFF]

(10) Output video system [V – ＊＊＊＊]

NTSC system [NTSC]
PAL system [PAL]
Auto-setting [AUTO]

Skirt terminal output [SK – ＊＊]

VIDEO [00]
S-VIDEO [01]
RGB [02]

Note : Display only the model which can do the output setting of skirt terminal.

(11) FTS servo IC information

DSP coefficient indication [KS – [＊＊＊＊] ＊＊＊＊]
Displays the address (four digits) of the specified coefficient and the setting value (four digits) with [TEST] and [9] keys.

(12) Error rate indication

① C1 error value of CD [ER – C1 ＊＊＊＊]
② C1 error value of DVD [ER – ＊＊＊＊ ＊＊＊＊]

(13) Internal operation mode of mechanism controller [MM – ＊＊ : ＊＊]

Internal mechanism mode (2 digits) and internal mechanism step (2 digits) of the mechanism controller

(14) ① Disk sensing [DSC – ＊＊＊]

The type of discs loaded is displayed.
[DVD], [CD], [VCD], [ ]

② CD 1/3 beam switch [BM – ＊＊]

(15) ① Equalizer value [E – ＊＊]

② Jitter value [J – ＊＊]

nake the jitter four times, and renew it in every one second. [4 – ＊＊]
CD is effective only in the jitter value.

(16) Version of the AV-1 chip [AV : ＊ . ＊＊' ＊']

(17) ① Version of the FL controller [FL : ＊＊＊＊]

② Region setting of the player [REG : ＊]

Setting value [1] to [6]

(18) Destination setting of the FL controller [MDL : ＊＊＊＊ / ＊＊＊]

For charactors in front represent the type of model :
There charactors that follow represent the destination code.
J : /J, K : /KU, /KC, /KU/KC, R : /RAM, /RL, /RD, /LB,
WY : /WY

(19) The part number of the flash ROM and system controller [＊＊＊＊＊＊ / ＊＊＊＊＊＊＊]

① Part number of the flash ROM <Front>
(Example) VYW1536-A = W1536A
(Example) PD6256A9 = 6256A9
② Part number of the system controller <Rear>
(Example) PD3381T1 = 3381T1

(20) ① Version of the flash ROM [V : ＊ . ＊＊＊]

② Flash ROM size [FLSH = ＊]

(21) Revision of the system controller [S : ＊ . ＊＊＊ / ＊ . ＊＊]

① Revision number of the external ROM part (flash ROM) of the system controller <Front>
② Revision of the internal ROM part of the system controller <Rear>

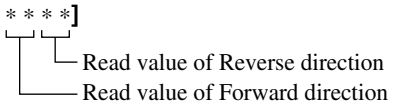
(22) Revision of the DVD mechanism controller [M : ＊ . ＊＊＊]

Revision number of the external ROM part (flash ROM) of the DVD mechanism controller

(23) Control and part numbers of the GUI-ROM [GUI : ＊＊＊＊]

No GUI model displays as "—— / ——".
OEM model displays the part number of GUI-ROM
[GUI : ＊＊＊＊]

(24) Read value of the slit width (for Stop position detection) [FR ＊＊＊＊]



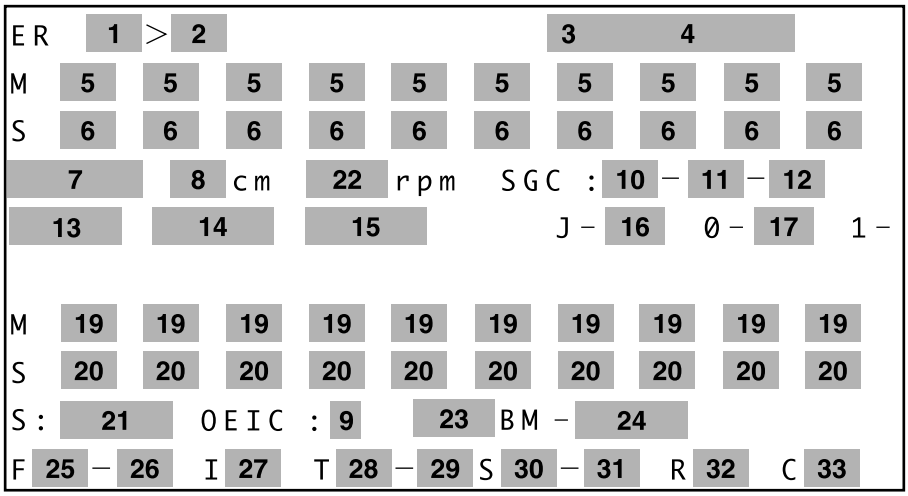
■ DEBUGGING SCREEN SPECIFICATION FOR THE MECHANISM CONTROLLER

• This specifications is subject to change without notice.

① Indication Method of The Mechanism Controller Debugging Screen

A debugging screen of the mechanism controller is indicated when pressing the test mode remote control unit [GGF1067] in order of the [ESC] and [CHP/TM] buttons.
Releace from debugging screen display of the mechanism controller with the [ESC] button.

② Screen Layout



③ Indication Contents

1. The error that became the trigger that an error of 2 occurred.
   There are many cases same as 2.

2. The error number that transferred to the system controller
   Refer to the error list about contents of error number.

3. Code read in state (it does not support in this unit)
   When X is indicated, ID or subcode are not able to read in.
   When X is not indicated, they are able to read in.

4. ID or subcode (it does not support in this unit)
   Subcode indicates the A time.

5. Inside mode of the mechanism controller when an error of 1 occurred
   It can indicate to a maximum 10 mode. Indicate it in order of an old mode from the left, and go right, and become a new mode. Indicate only a nest share of the mode.

6. Processing step of inside mode of 5
   It can grasp the mode reaching an error and transition of step by watching 5 and 6 and it can specify the occurrence place of most errors.

7. Disk information in the mechanism controller
   ? : Indistinctness
   NO : There is no disc
   DVD 1 : DVD single layer
   DVD 2 : DVD dual layer
   CD : CD
   CDR : CD-R or CD-RW
   CDR P : PRD of CD-R or CD-RW

8. As a result of 8cm /12cm distinction
   ? : Indistinctness (undistinction)
   8 : 8 cm
   12 : 12 cm

9. OEIC gain (it does not support in this unit)
   H : OEIC HIGH gain
   L : OEIC LOW gain

10. SGC gain for LD of 780nm
    It indicates a step using in the mechanism controller inside with a hexadecimal number.
    Set the gain so that S curve becomes 1.8V (p-p) in disc distinction.

11. SGC gain for LD of 650nm For L0.
    It indicates a step using in the mechanism controller inside with a hexadecimal number. Set a gain so that S curve becomes 1.8V (p-p) in disc distinction.

12. SGC gain for LD of 650nm For L1.
    It indicates a step using in the mechanism controller inside with a hexadecimal number. Set a gain so that a S curve becomes 1.8V (p-p) in disc distinction.

13. RF count value for disc distinction
    RF count value to use the disc distinction. It compares threshold value of 14 and 15 and distinguishes the disc.

14. Disc distinction threshold value (DVD and CD)
    Threshold value of the disc distinction. Distinguish it from DVD if bigger than this value, and distinguish it from CD if small.

15. Disc distinction threshold value (CD and unrecorded disc)
    Threshold value of the disc distinction. Distinguish it from CD if bigger than this value, and distinguish it from an unrecorded disc if small.

16. Current jitter value
    Indicate the value that was read in from the MY-CHIP in DVD, and indicate the value that was read in from the servo DSP in CD.

17. Focus balance setting value of L0

18. Focus balance setting value of L1

19. Current mechanism controller inside mode
    (it does not support in this unit)
    It can indicate to a maximum 10 modes. Indicate only a nest share of the mode.

20. Processing step of 11 inside modes
    (it does not support in this unit)
    It can grasp the current mode, the mode reaching it and transition of step by watching 19 and 20.

21. Spindle control state of MY-CHIP
    (it does not support in this unit)
    OFF : Motor off condition
    A/B : Accelerator and brakes
    FG : FG servo
    RVP : Rough speed phase servo
    ORVP : Rough speed phase servo of offset addition

22. Rotation number of spindle motor
    Do not FG read in ? indication (during spindle stop).

23. Tracking error generation system
    (it does not support in this unit)
    1: 1 beam (DPD)
    3: 3 beams

24. TZC count value (it does not support in this unit)
    The value that counted the number of TZC for one rotation in the tracking open state.
    When this value is more than 512 with CD, set it in 1 beam because the eccentric is large.
    DVD does not measure it because it is 1 beam fixed (indication is 0000).

25. It indicates the frequency that entered the focus backup
    Hexadecimal number indication. Counter does not reset till turns the power off after turning it on. Due to a 1 byte counter, next of FF becomes 00.

26. It indicates focus backup limit frequency with the hexadecimal number
    Initial value is 14H, it does decrement whenever enter the focus backup and it gives up backup if it became 0. Then the error is generated. After reverted from the backup, When not enter the backup and pass fixed time (1500ms), return to initial value again.

27. It indicates the frequency that entered the internal circumference plunging into backup of the sled
    Hexadecimal number indication. Counter does not reset till turns the power off after turning it on. Due to a 1 byte counter, next of FF becomes 00.

28. It indicates the frequency that entered the tracking overrun backup
    Hexadecimal number indication. Counter does not reset till turns the power off after turning it on. Due to a 1 byte counter, next of FF becomes 00.

29. It indicates the limit frequency of tracking overrun backup with a hexadecimal number
    Initial value is 03H, it does decrement whenever enter the tracking overrun backup and it gives up backup if it became 0.

30. It indicates the frequency that entered sled overrun backup
    Hexadecimal number indication. Counter does not reset till turns the power off after turning it on. Due to a 1 byte counter, next of FF becomes 00.

31. It indicates the limit frequency of sled overrun backup with a hexadecimal number
    Initial value is 03H, it does decrement whenever enter the sled overrun backup and it gives up backup if it became 0.

32. It indicates the frequency that entered the tracking close NG backup
    Hexadecimal number indication. Counter does not reset till turns the power off after turning it on. Next of FF is be a 1 byte counter in 00.
    The hexadecimal number indication which indicates the frequency that reads

33. ID/subQ, and entered NG backup
    Hexadecimal number indication. A counter does not reset it till cuts it off after turning it on. Due to a 1 byte counter, next of FF becomes 00.

34. An address to indicate in 35
    Set it by using RS232.I
    (an address) Set it with DA.

35. Contents of an address indicated in 34.

7.1.4 ERROR CODE

Error codes that are displayed on the FL display without using the remote control unit

FL Display	Possible causes	Operation of the unit
AV1 VER	AV-1 chip is not a match with the program of system controller	The sound may not out with the specific audio.
CPU AERR	CPU address error (Hardware is unusual.)	No operation
DMA AERR	DMA address error (Hardware is unusual.)	No operation
FLASH ID	Difference in versions of the internal ROM of the system controller and of the flash ROM, or bus line failure or reverse installation	No operation
FLASH WRP	Write protect error of the flash ROM	No operation
FLASH SIG	Difference in part number of the flash ROM (When the ROM which could't be used was used.)	No operation
FLASH SUM	Check sum error of the flash ROM (It exceeds the regular size.) or reverse installation (Hardware is unusual.)	No operation
FLASH SIZE	Size error of the flash ROM (Use 4 or 8 M-bit.)	No operation
ILLGAL	The system controller fetched a code other than an operation code (Hardware is unusual.)	No operation
RESERVE	Undefined interrupt (Hardware is unusual.)	No operation
SLOT	Inappropriate slot command issued (Hardware is unusual.)	No operation

Error codes that are displayed on the FL display by using the remote control unit (Mechanism controller error)

To display: ESC + DISPLAY + DISPLAY; Location of the display: At the two digits of center of the FL display

To display the error history: ESC + DISPLAY + One shot; Location of the display: TV screen

FL	Description of Error	Causes if with a DVD	Causes if with a CD	Operation of the Unit
11	Search timeout	Search could not be complete within 7 seconds.	Search could not be complete within 7 seconds, and it could not enter the target area within 7 seconds by VCD scan.	CD : Stops, DVD : Continues operation
12	Search retry error	A search could not be completed after 3 retries, search backup was executed 4 times, or in a case of timeout (6 seconds) while the unit was tracing 11 tracks or more beyond the target while the search operation was converging.	Backup against slider skip was executed 4 times during a search, or slider skip twice resulted in starting from the read-in point.	CD : Stops, DVD : Continues operation
19	Tracing timeout while converging	Timeout (10.5 seconds) while tracing at the stage of convergence of a search.		Stop
1B	Index 0 search error		During Track (Index) Search, the search for the beginning of a program could not be completed within 3 seconds (20 seconds in the case of Index Search) after positioning based on the TOC data was completed.	Stop
22	Timeout of slider inner circumference	Inside switch could not ON within 3 seconds.		Stop
23	Timeout of slider outer circumference	Inside switch could not OFF within 2 seconds.		Stop
33	No FOK pulse during playback CLVA	When the focus was deviated continuously 20 times.		Adjusts focus at the innermost circumference and tries to return to its position where the error was generated (for 3 times),then opens. If the same error persists after one retry, the tray opens. (No FOK pulse)
38	Disc-type-sensing error	If normal starting was impossible in the following three cases, disc-type sensing will be retried if other errors occure excepting C5 error. However, when the focus error "33" was occured continuously 3 times, it is finished as "38 error" at the moment: (1) startup with the first disc-type-sensing result, (2) forced startup with another disc by designating the disc type, (3) forced startup with the original disc by designating the disc type.		Open

FL	Description of Error	Causes if with a DVD	Causes if with a CD	Operation of the
39	SGC converge timeout	SGC could not converge during detects the peak		Open
41	Spindle timeout	The unit did not enter Stop mode within 10 seconds of issuance of a Stop command.		Stop
48	Spindle FG transition timeout	The spindle could not converge into within ± 12% of the target FG rotation speed within 10 seconds after spindle kick. The first time after startup (the first time after disc distinction), it doesn't become the number of the target rotation within five seconds. The first time after startup, detects the abnormal rotation number of high-speed continuously 3 loops. DVD: 5 to 9 mS , CD: 40 to 60 mS		Stops. (FG timeout)
49	Spindle PLL transition timeout	After the second times after startup, it doesn't become the number of the target rotation within five seconds. Detects the abnormal high-speed or low-speed rotations. DVD: 5 to 9 mS , CD: 40 to 60 mS		Stops. ("73" is displayed during starting process.)
4A	Spindle lock timeout	Spindle could not lock more than 1.5 seconds before start the AFB.		Stops. ("73" is displayed during starting process.)
51	Auto sequence timeout of peak	ABUSY did not return within 1 second after the DDTCT (peak detection) command was sent.		Stop
52	Auto sequence timeout of focus jump down	ABUSY did not return within 30 mS after the FJMPD (Focus jump 1 to 0) command was sent.		Stop
53	Auto sequence timeout of focus	ABUSY did not return within 30 mS after the FJMPU (Focus jump 0 to 1) command was sent.		Stop
54	Auto sequence timeout of play AGC	ABUSY did not return within 50 mS after the GSUMON (play-AGC-measuring) command was sent.		Stop
55	Auto sequence timeout of disc-type-sensing	ABUSY did not return within 2 seconds after the DJSRT (disc-sensing) command was sent.		Stop
56	Auto sequence timeout of ATB2	ABUSY did not return within 1 second after the TBLOFS (Internal ATB after the completion of external ATB) command was sent.		Stop
57	Auto sequence timeout of tracking servo ON	ABUSY did not return within 500 mS after the TSON (tracking servo ON) command was sent.		Stop
58	Auto sequence timeout of ATB1	ABUSY did not return within 200 mS after the TBL (external ATB) command was sent.		Stop
59	Auto sequence timeout of focus gain adjustment	ABUSY did not return within 2 seconds after the FGN (focus gain adjustment) command was sent.		Stop
5A	Auto sequence timeout of tracking gain adjustment	ABUSY did not return within 2 seconds after TGN (tracking gain adjustment) command was sent.		Stop
5B	Auto sequence timeout of offset adjustment	ABUSY did not return within 1 second after the CMDAVE (offset adjustment) command was sent.		Stop
5C	Auto sequence timeout of modulation factor measurement	ABUSY did not return within 200 mS after the ADJMIR (modulation factor measurement) command was sent.		Stop
5D	Auto sequence timeout of auto focus bias	ABUSY did not return within 2 seconds after the AFB (auto focus bias) command was sent.		Stop
5F	Auto sequence already busy	A command could not be sent because ABUSY was low. ABUSY did not return within 200 mS after TLV command was sent.		Stop
62	Pause retry error	Pause mode could not be restored within three retries after it had been released.		Continues operation

FL	Description of Error	Causes if with a DVD	Causes if with a CD	Operation of the Unit
71	ID can not read during tracing	An ID could not be read for 1 second or more.		Stop
72	Subcode check failure during playback		No frame could be read for 3 seconds or more.	Stop
73	ID can not read at the startup	An ID could not be read within 1 second after the AFB adjustment had been finished.		Opens (ID readout failure)
74	Subcode check failure during startup		No subcode could be read within 3 seconds after AFB adjustment had been finished.	Opens (Subcode readout failure).
81	Timeout for reading TOC of the mechanism controller		TOC readout took 30 seconds or more.	Stop
82	Timeout for reading TOC of the system controller		Reading TOC of the system controller took 30 seconds or more.	Stop
A1	Communication timeout of DSP command	A command could not be issued to DSP because Command Busy (XCBUSY) was in force (XCBUSY = L) for a specified time (about 200 mS).		No operation
A2	Communication timeout for reading DSP coefficient	Command Busy (XCBUSY) was in force for a specified time (about 200 mS) before and after a coefficient read command was issued to DSP, or the address echo-back after command issuance did not match the setup address.		No operation
A3	Communication timeout for writing DSP coefficient	Command Busy (XCBUSY) was in force for a specified time (about 1024 mS) before and after the coefficient write command was issued to DSP.		No operation
A4	Communication timeout for continuously writing DSP coefficient	Command Busy (XCBUSY) was in force for 200 mS during continuous coefficient writing, or before and after a continuous write command was issued to DSP.		No operation
B1	Timeout error for backup	In the tracing state during the backup sequence, codes could not be read for 1 second or more. In the backup sequence, tracking ON sequence of the servo DSP could not be completed even if more than 500 mS after the tracking ON command was issued.		Stops
B2	Retry error for backup	Tracing impossible after retring the tracking ON for 3 times in the backup sequence.		Stops
B3	Retry error for trace	During tracing, runaway was detected after three iterations of backup operations for detecting runaway.		Stops
C3	Detection of tracking overcurrent	During playback, the overcurrent detection port was at L for 300 ms or more continuously.		Stops (the mechanical controller operates independently).
(C5)	Short-circuit test corresponding error	While the power was on, the overcurrent detection port was at L for 40 ms or more continuously.		Turns off the power instantly (No indication on the FL display and no writing to flash memory)
E3	Violation against digital copy guard			Stops
F5	Tray being pushed	The tray switch that had been Open mode was forcibly changed to a mode other than Open by an external force.		Closes
F8	Loading timeout	Loading, unloading or clamping could not be completed within a specified time (about 5 seconds).		Reverses the loading direction. It timeout is repeated upon retry, the unit stops.
FC	Focus	The following error occured eight times. (1) Focus ON sequence could not be completed even if more than two seconds after the focus ON command (to the servo DSP) was sent. (2) Focus IN sequence was finished, actually focus IN was not completed.		Stops wherever possible then opens (stops in the case of side B).

Error codes that are displayed on the FL display by using the remote control unit (Device error)
To display : ESC + DISPLAY + DISPLAY ; Location of the display : At the two digits of left of the FL display

FL	Description of Error	Causes if with a DVD	Causes if with a CD	Operation of the Unit
bit3=1 08 etc.	AV1 access error (read, write NG)			No operation or it becomes debugging indication if the power is able to ON.
bit2=1 04 etc.	MY CHIP access error			
bit1=1 01 etc.	SRAM access error			

7.1.5 DISASSEMBLY

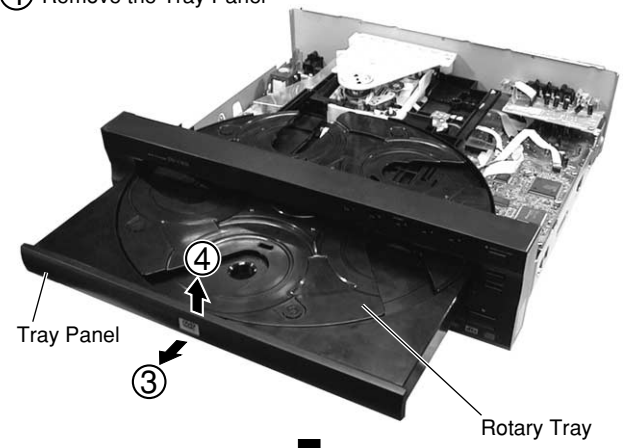
DIAGNOSIS OF PCBs

Note

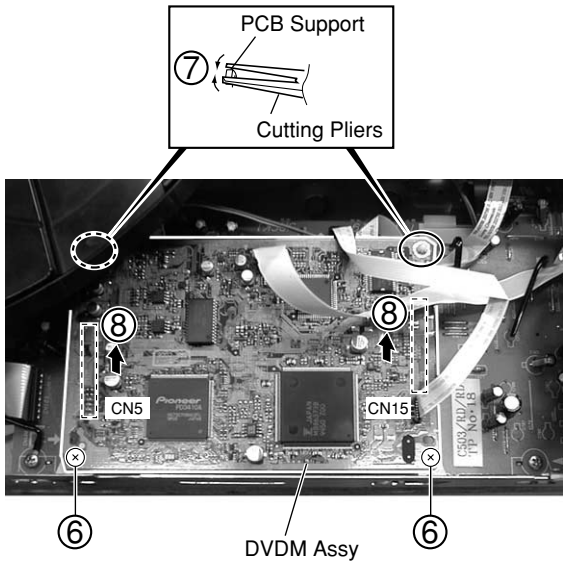
When diagnosing the unit, be sure to use two connection cables for service. (Part No : GGD1228)

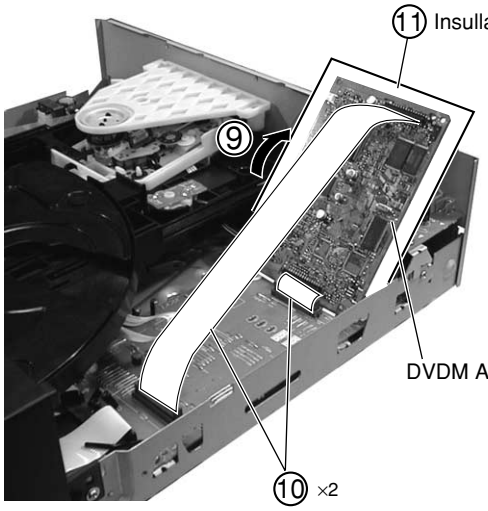
1 DVDM Assy

① Remove the Bonnet (Screws × 6)
② Power ON
③ Tray Open (⏏)
④ Remove the Tray Panel



⑤ Power OFF (Pull out the Power Cord from the outlet.)
⑥ Remove two Screws
⑦ Unhook two PCB Supports
⑧ Remove the DVDM Assy (Connectors × 2)



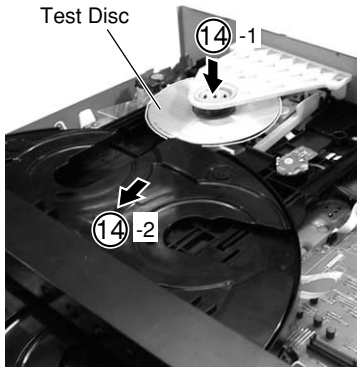


Connect two Connection Cables for Service (GGD1228)

Attention :
Be carefull not to put the flexible cables when closing the tray

⑬ Put the Power Cord in the outlet
⑭ Power On → Tray close (Automatically)

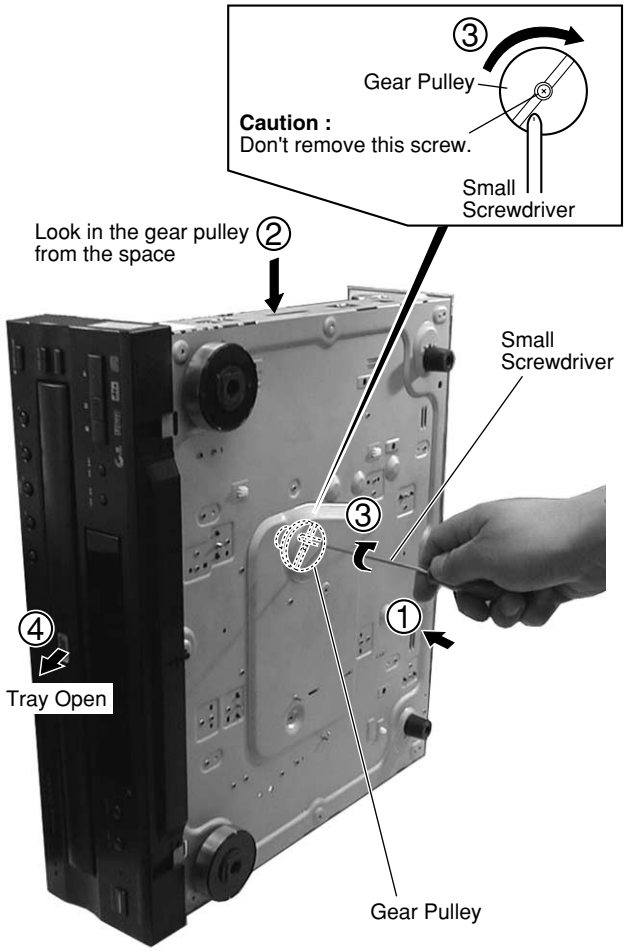
⑭ Press the EXCHANGE Button
(Clamp the Test Disc → Tray Open)



⑮ Play

Diagnosis

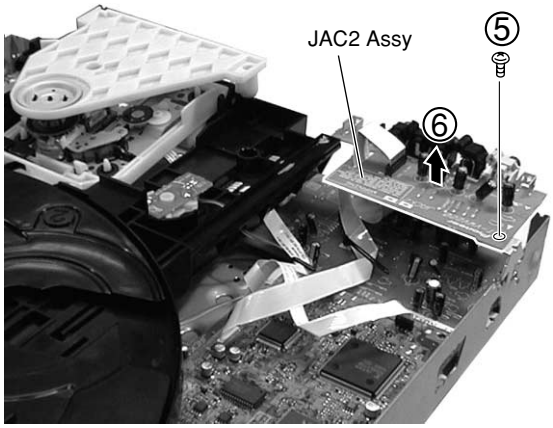
● **How to Open the Tray by Manual Operating**



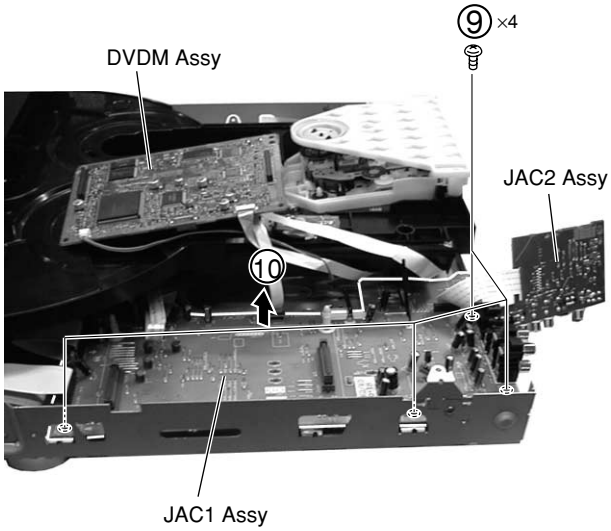
⑤ If the tray moved toward the front about 2 or 3 cm, pull out the tray by hands.

2 JAC1 and JAC2 Assemblies

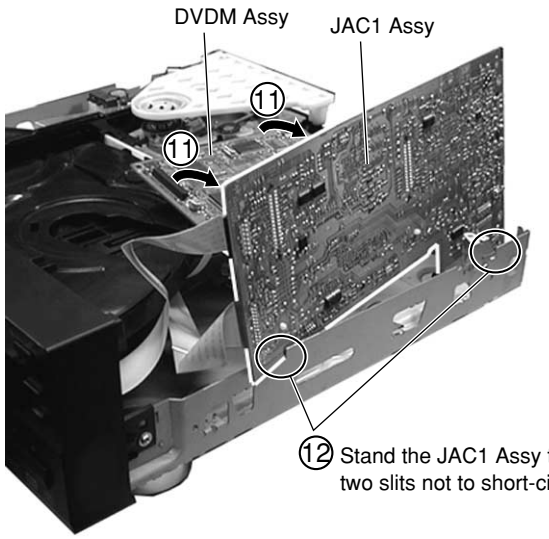
① Remove the Bonnet (Screws × 6)
② Remove the Rear Panel (Screws × 12)
③ Power ON
④ Tray Open (⏏)

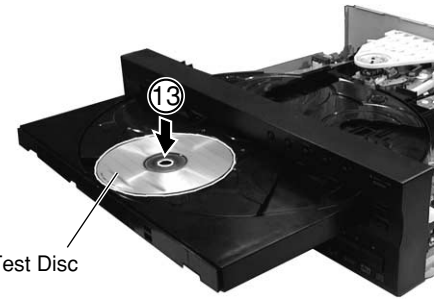


⑦ Pull out the Power Cord from the outlet.
⑧ Remove the DVDM Assy (Refer to step **1**)



⑪ Set the DVDM Assy (two connectors) to the JAC1 Assy.





⑭ Put the Power Cord in the outlet.

⑮ Power ON

⑯ Tray Close (Automatically)
(Be carefull not to put the flexible cables.)

⑰ Play (►)

Diagnosis

3 FLKY, KYLB and PWSB Assemblies

① Remove the Bonnet (Screws × 6)

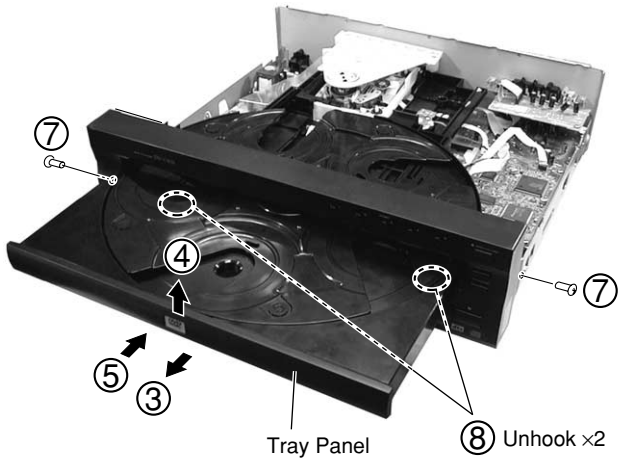
② Power ON

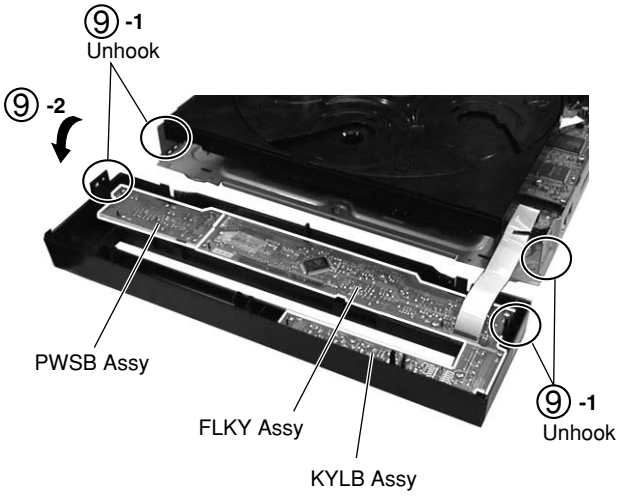
③ Tray Open (⏏)

④ Remove the Tray Panel

⑤ Tray Close

⑥ Power OFF (Pull out the Power Cord from the outlet)





⑩ Put the Power Cord in the outlet.

⑪ Power ON

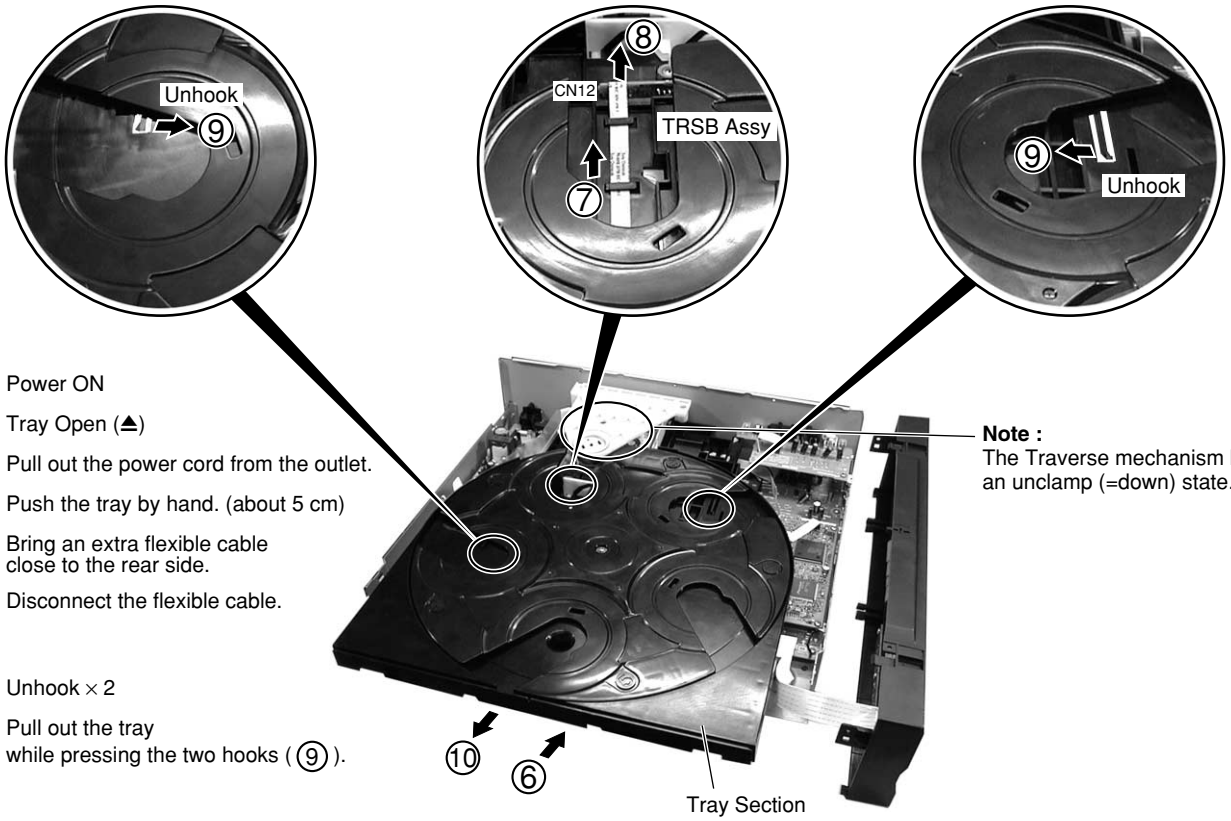
Diagnosis

TRAVERSE MECHANISM ASSY-S

● Disassembly

① Remove the Bonnet (Screws × 6)

② Remove the Front Panel Section (Refer to step **3**)



③ Power ON

④ Tray Open (⏏)

⑤ Pull out the power cord from the outlet.

⑥ Push the tray by hand. (about 5 cm)

⑦ Bring an extra flexible cable close to the rear side.

⑧ Disconnect the flexible cable.

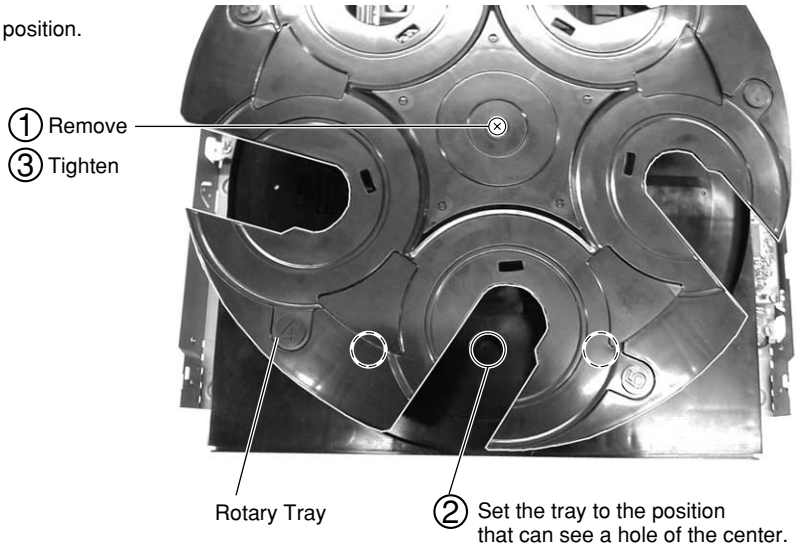
⑨ Unhook × 2

⑩ Pull out the tray while pressing the two hooks (⑨).

Note :
The Traverse mechanism being an unclamp (=down) state.

● When Tray Cannot Pull Out

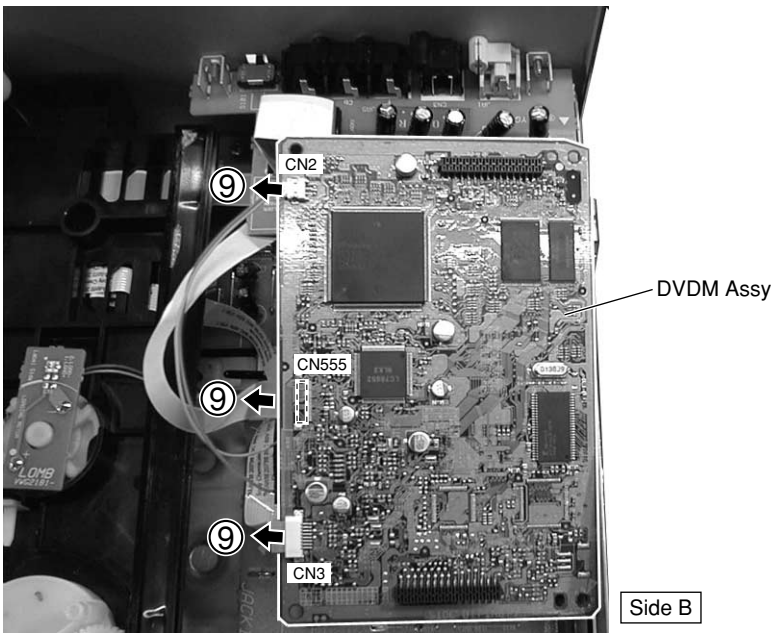
Tray cannot pull out that is not at a position of home position.
(When two hooks (⑨) hide under the Rotary Tray and can not pull out the tray.)
In that case, set the tray in the following procedures.

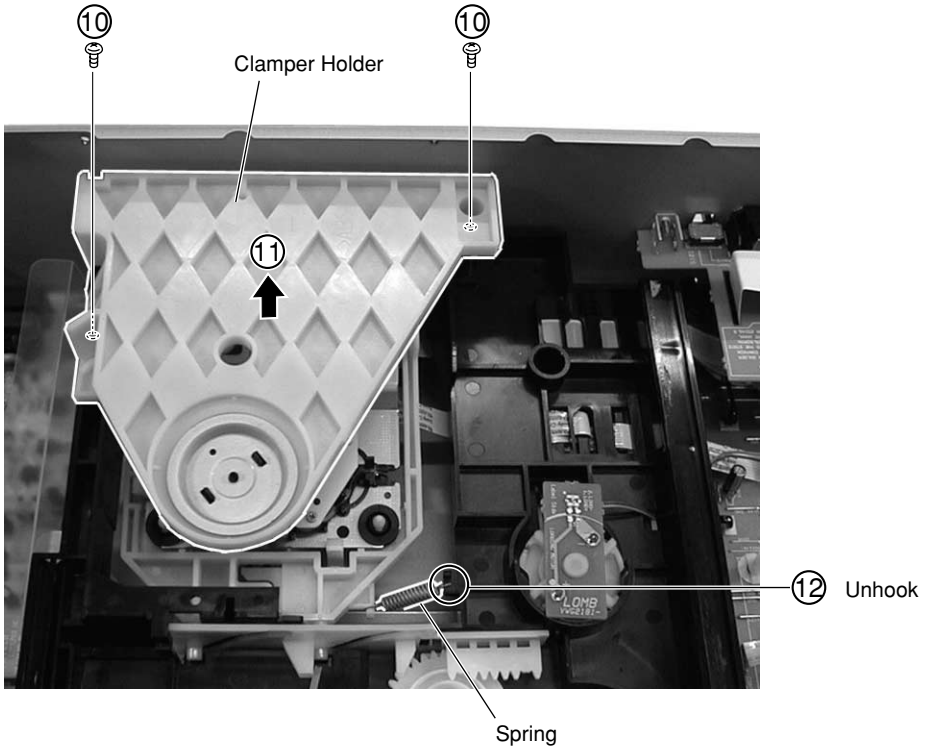


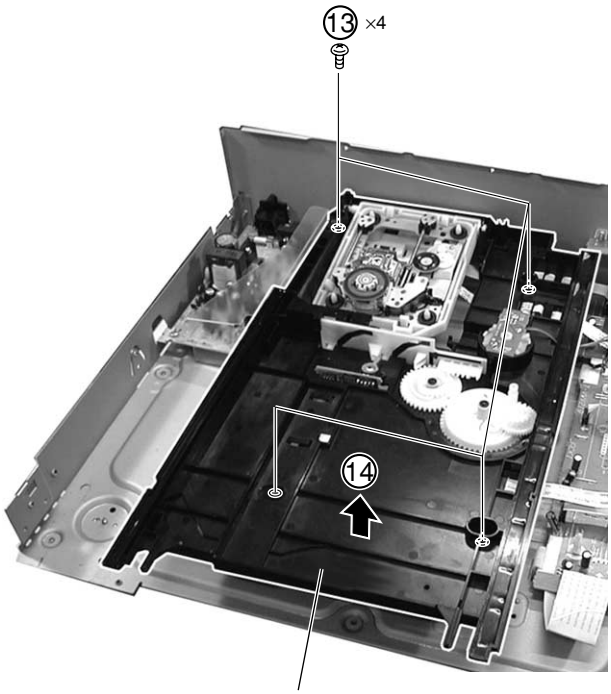
Note :
Do not need to match with Disc No. (1 to 5) when returns the tray.
Detect it automatically.

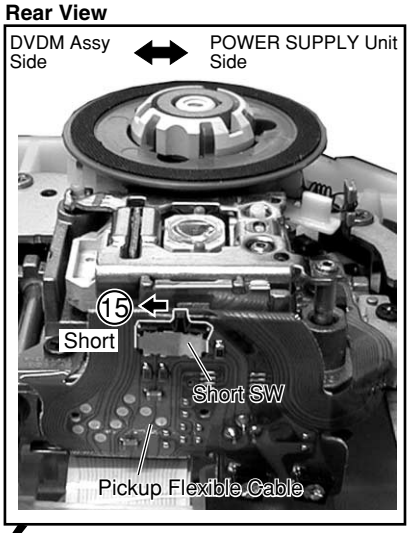
⑧ Remove the DVDM Assy (Refer to step **1**)

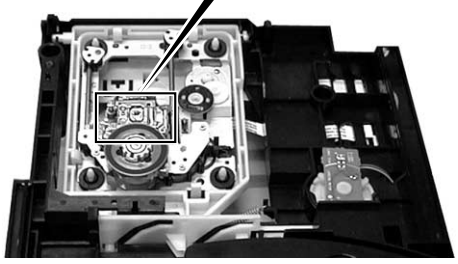
⑨ Remove three Connectors

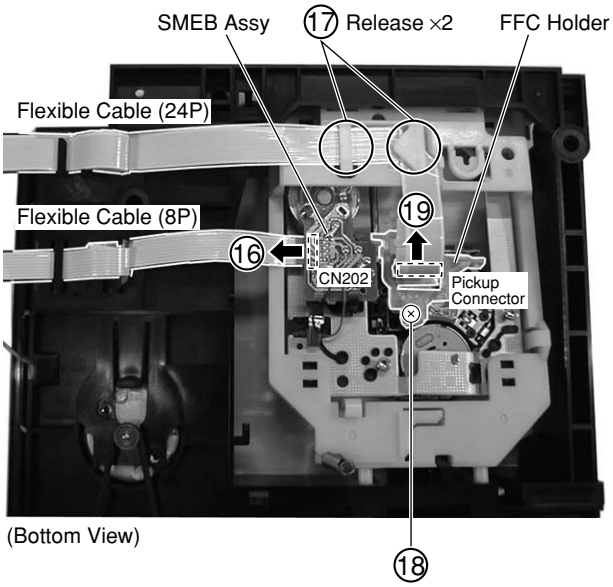


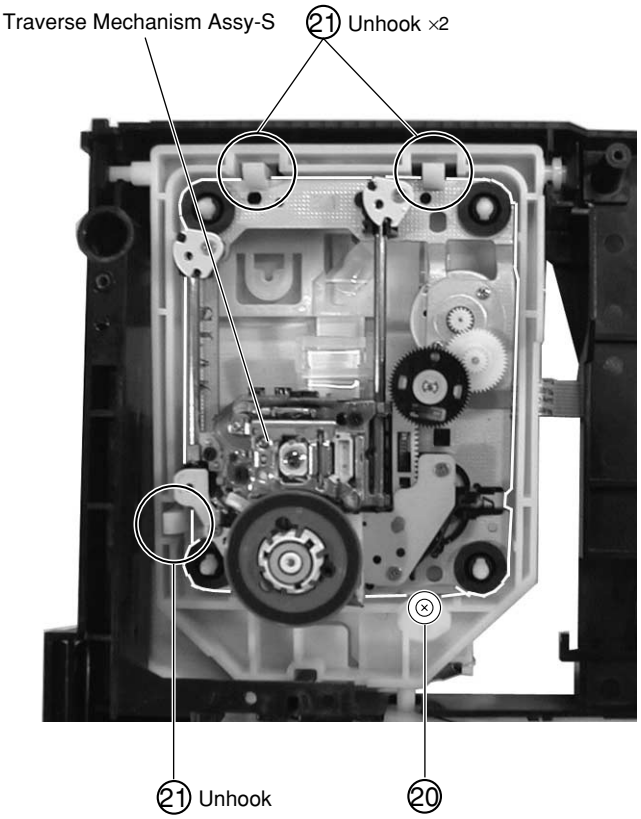



13 ×4
14
Mechanism Base Section


Rear View
DVDM Assy Side
POWER SUPPLY Unit Side
15
Short
Short SW
Pickup Flexible Cable

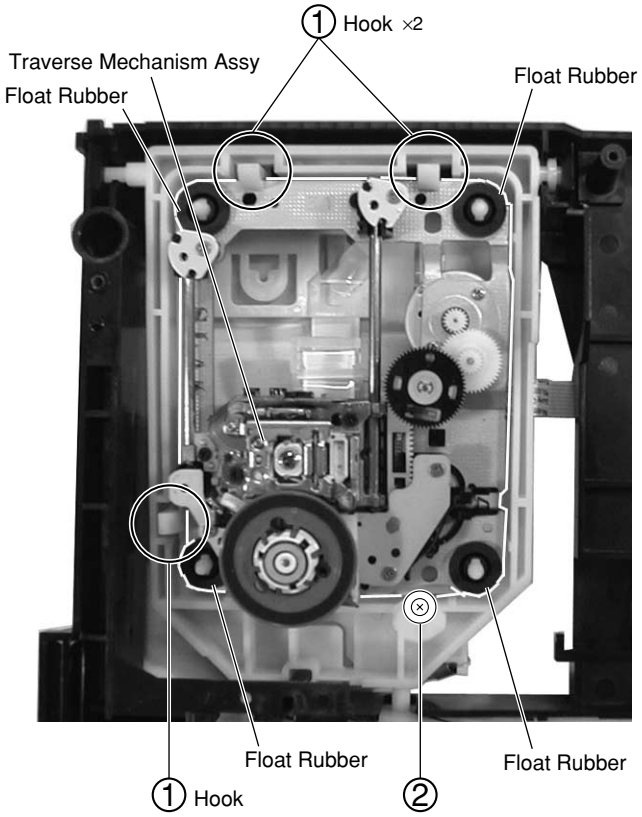



SMEB Assy
17 Release ×2
FFC Holder
Flexible Cable (24P)
Flexible Cable (8P)
19
16
CN202
Pickup Connector
18
(Bottom View)

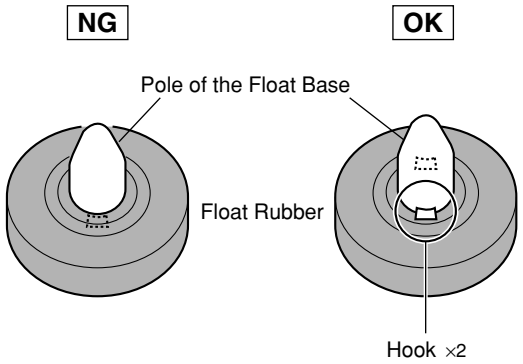

Traverse Mechanism Assy-S
21 Unhook ×2
21 Unhook
20

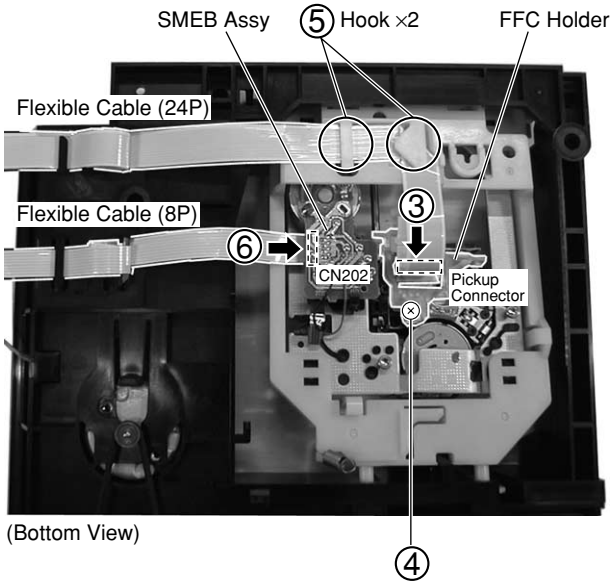
Exchange

● Assembly



Check the Float Rubbers ×4

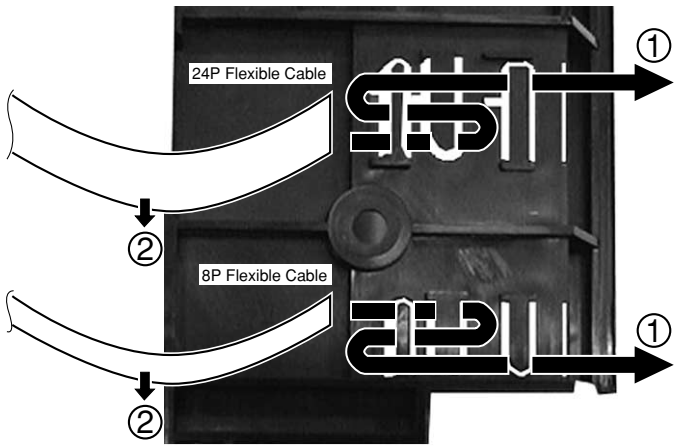




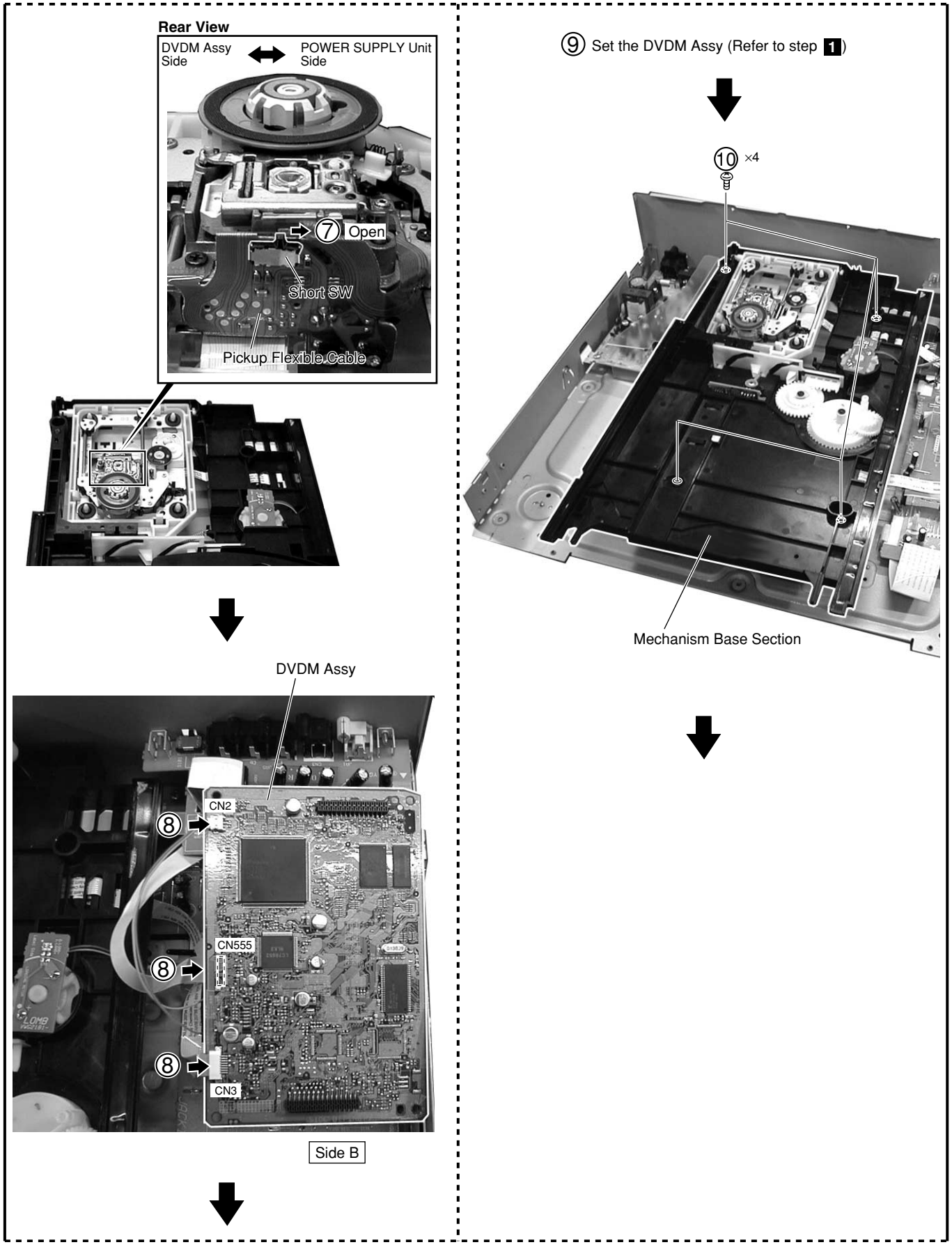
(Bottom View)

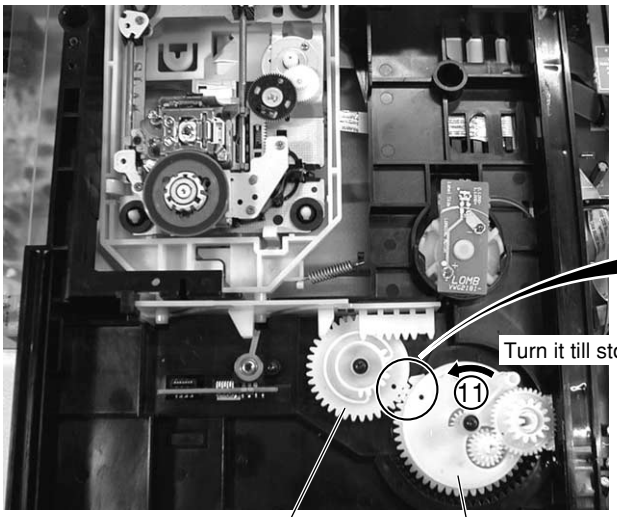
Reference

Styling of the Flexible Cables

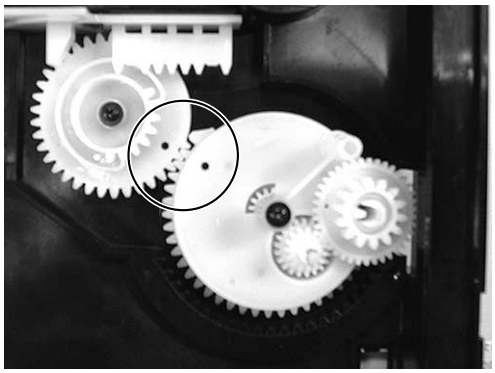


Leave slacking of two flexible cables


Rear View
DVDM Assy Side
POWER SUPPLY Unit Side
⑦ Open
Short SW
Pickup Flexible Cable
⑨ Set the DVDM Assy (Refer to step 1)
⑩ ×4
Mechanism Base Section
DVDM Assy
CN2
CN555
CN3
⑧
⑧
⑧
Side B

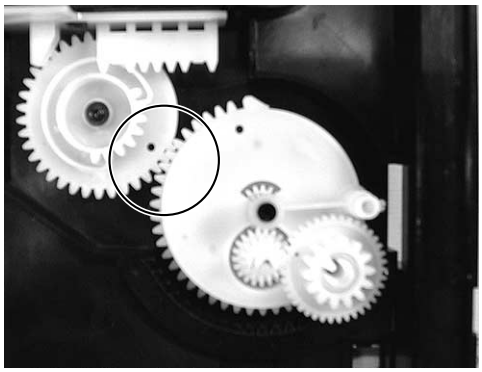


OK

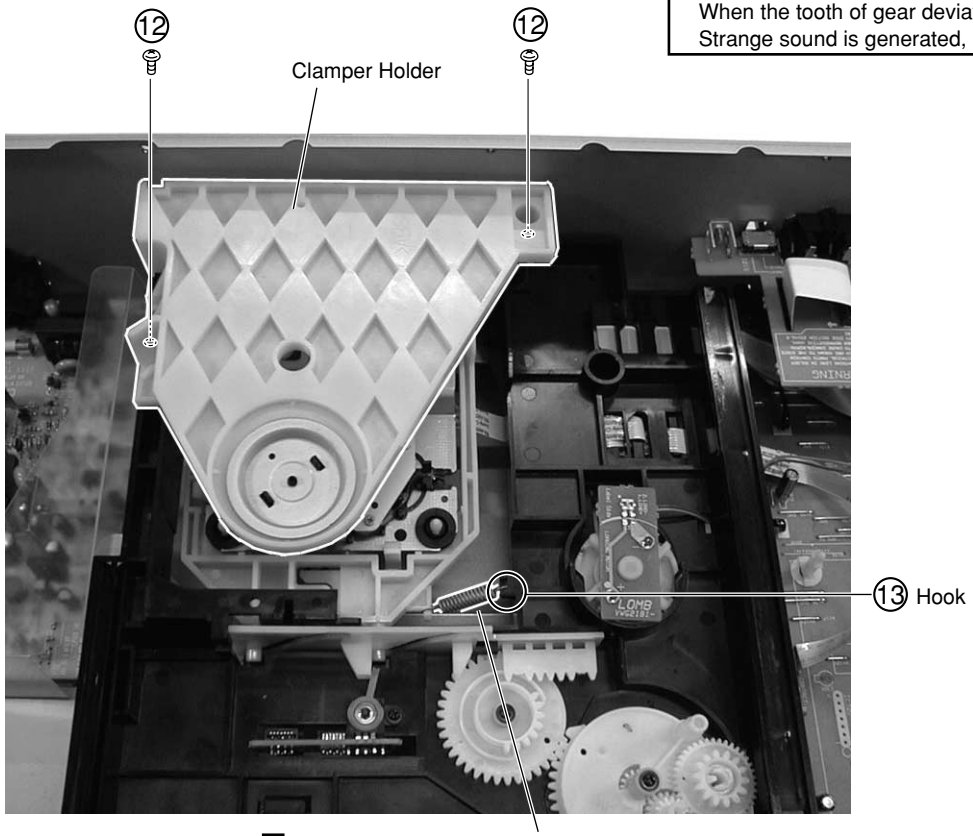


Match it between first teeth of the gear.

NG

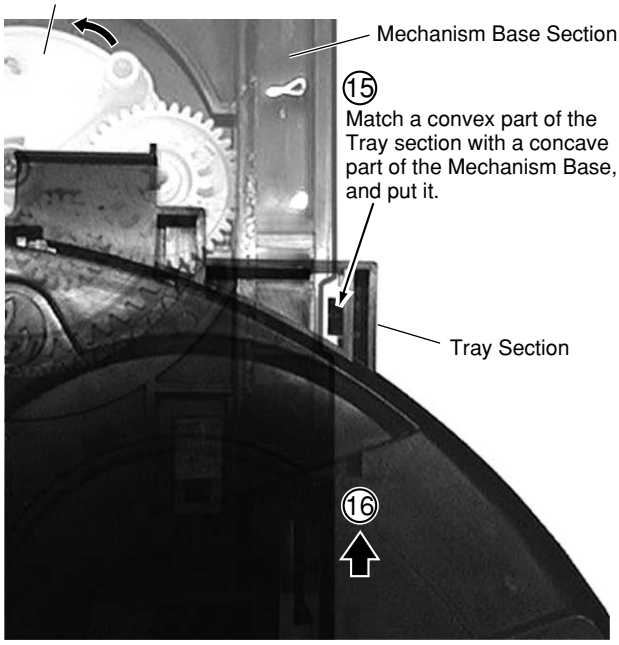


When the tooth of gear deviates more than two or three tooth, Strange sound is generated, and cause trouble.

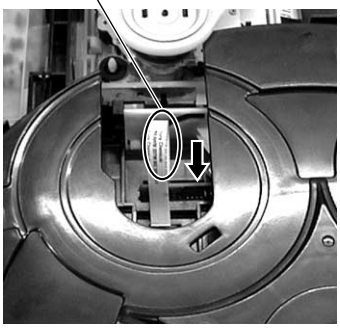


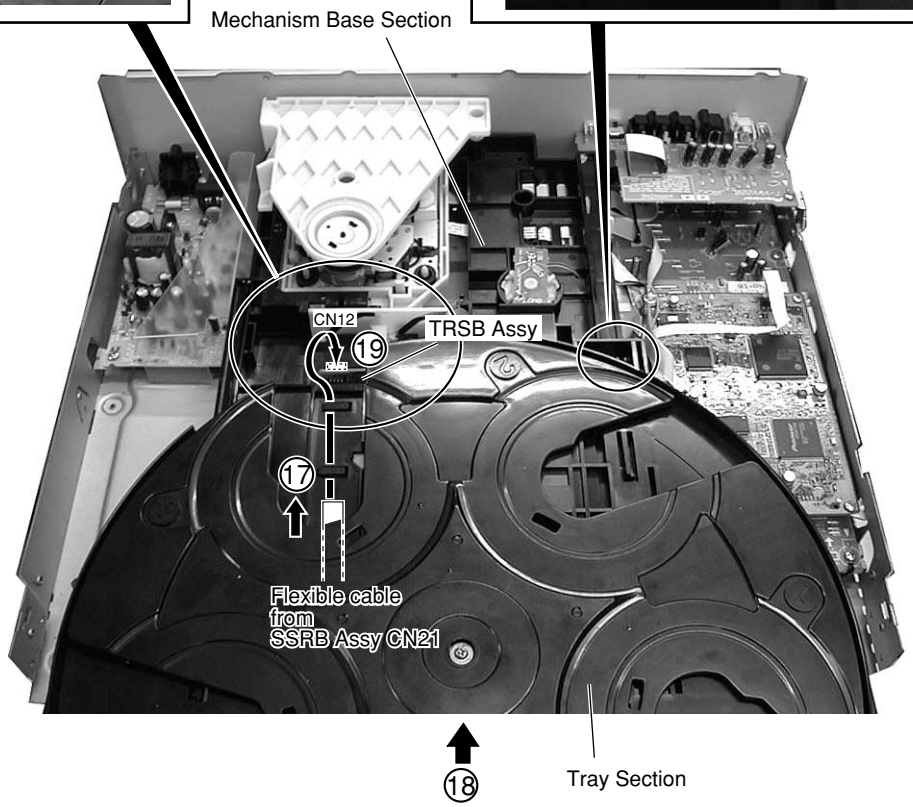
⑭ Assemble the Tray Section to the Mechanism Base Section

Confirmation :
Fully turning the Planet Base to an arrow direction.



⑳ Bring an extra flexible cable close to the front side.

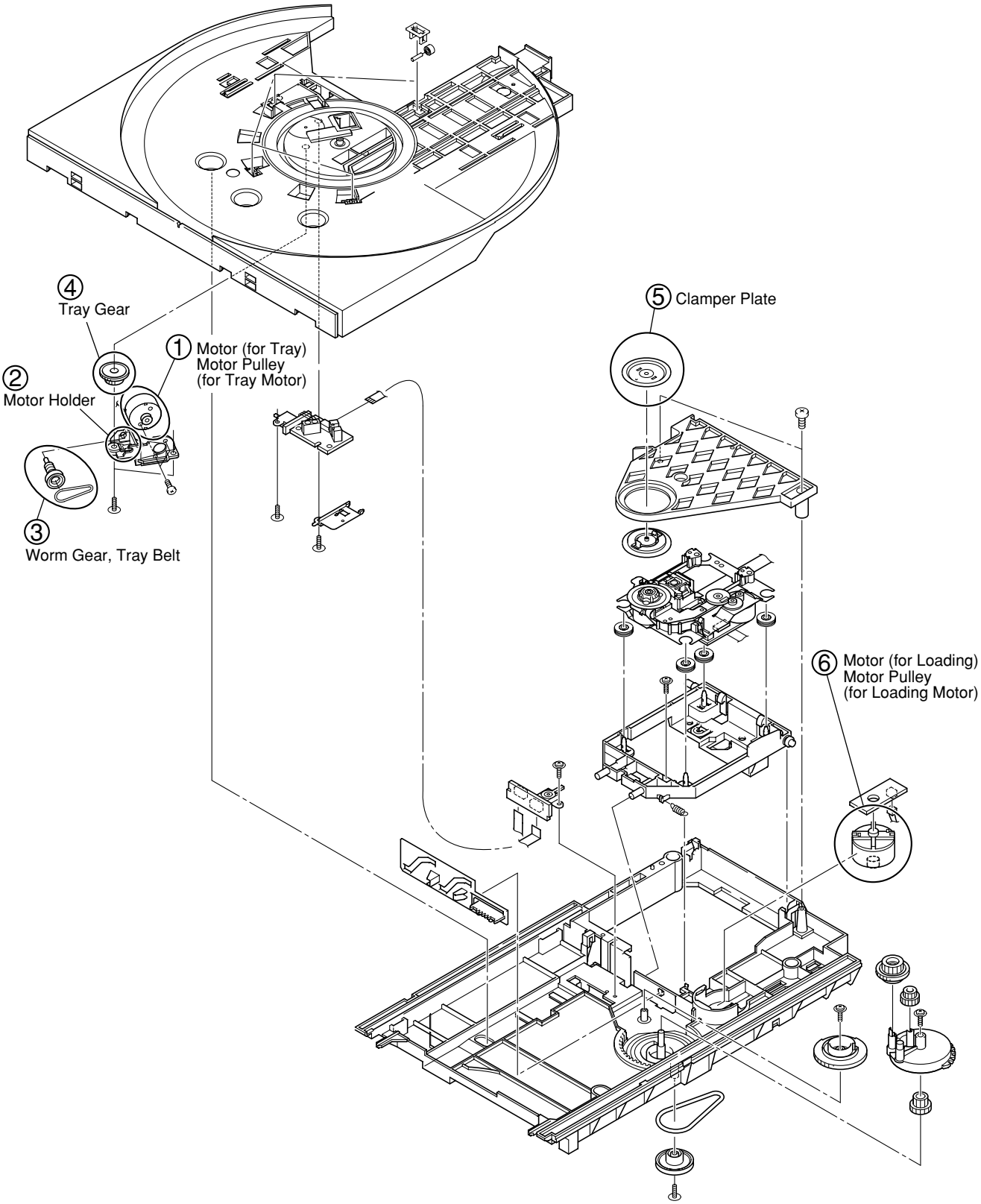




㉑ Assemble the Front Panel Section. (Refer to step **3**)

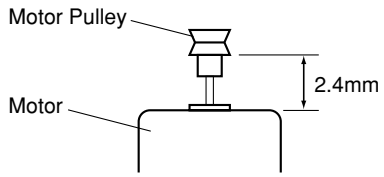
㉒ Assemble the Bonnet. (Screws × 6)

● Important Points when Assembling the Mechanism Section

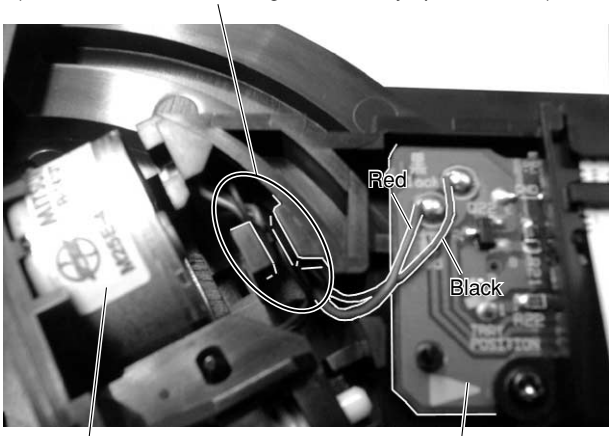


① Motor (for Tray), Motor Pulley (for Tray Motor)

Adjust the height of the Motor Pulley to 2.4mm.

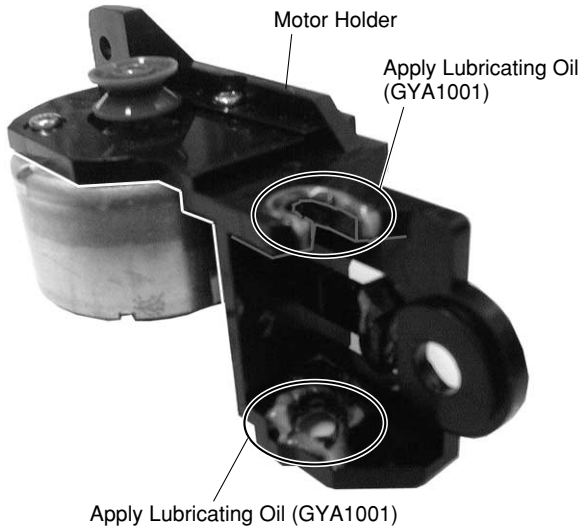


Wiring lead wires into the hook of Motor Holder.
(So that lead wires are caught at the Tray open or close.)



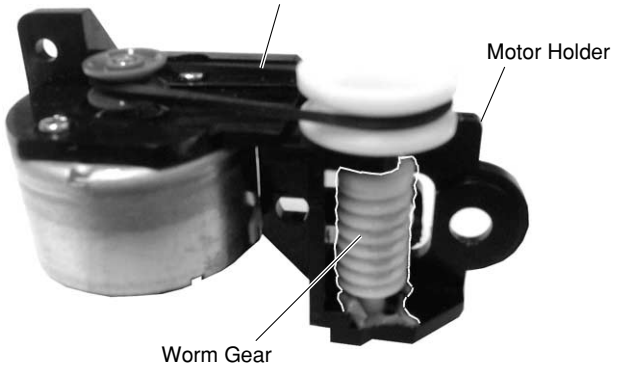
② Motor Holder

Apply Lubricating Oil (GYA1001) to the holder part.



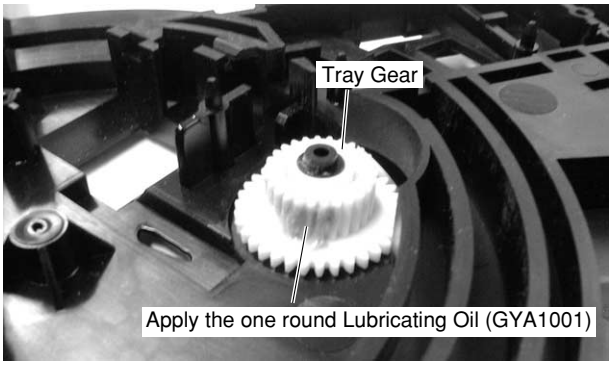
③ Worm Gear and Tray Belt

Tray Belt
Be carefull not to damage it in exchange.



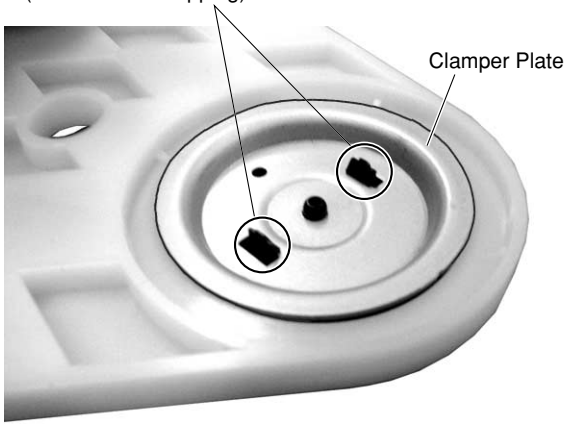
Apply the one round Lubricating Oil (GYA1001)

④ Tray Gear



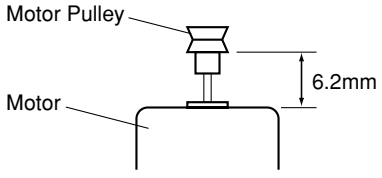
⑤ Clamper Plate

Apply the adhesive on the inside of hooks.
(Prevention of dripping)



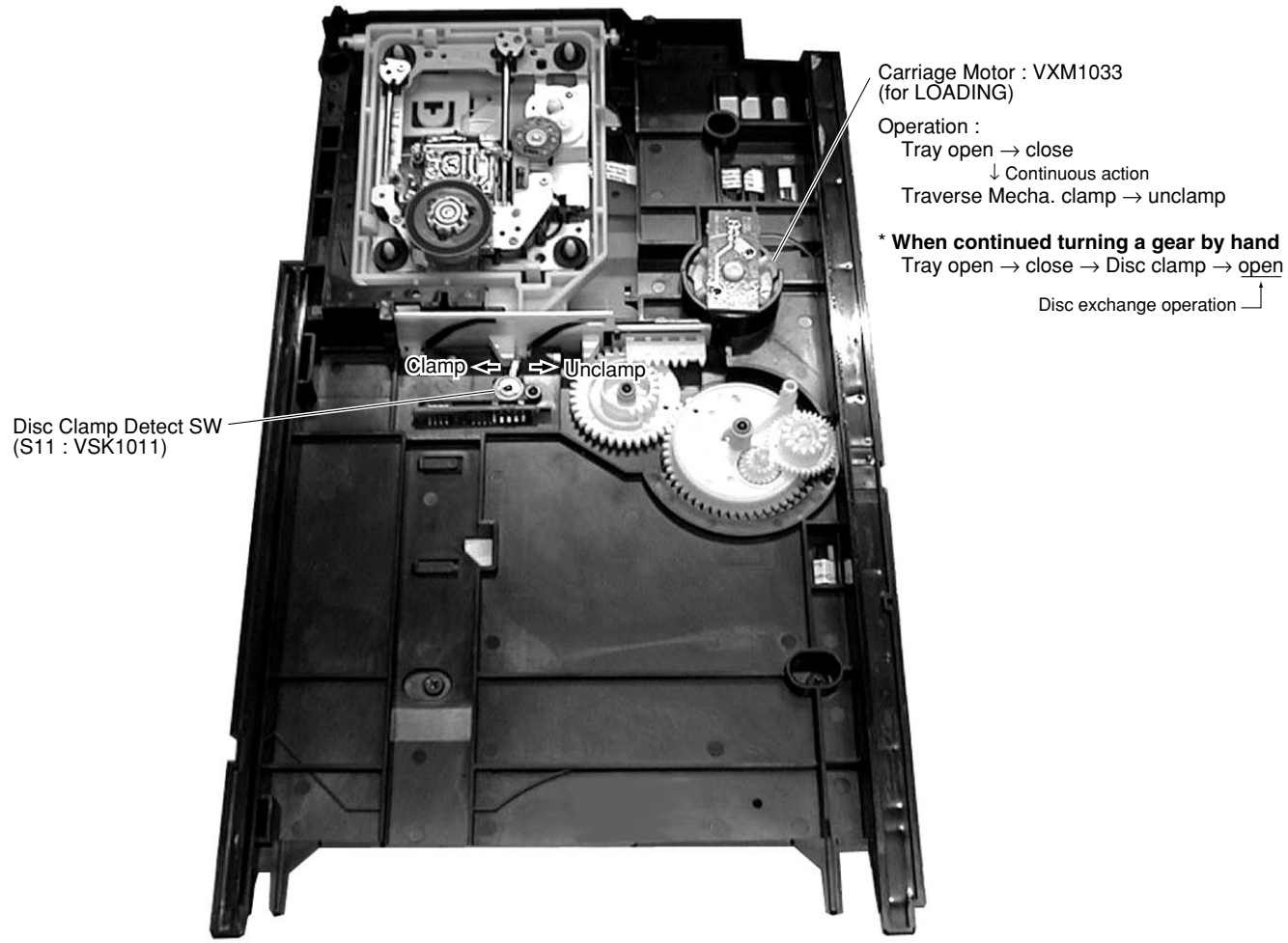
⑥ Motor (for Loading), Motor Pulley (for Loading Motor)

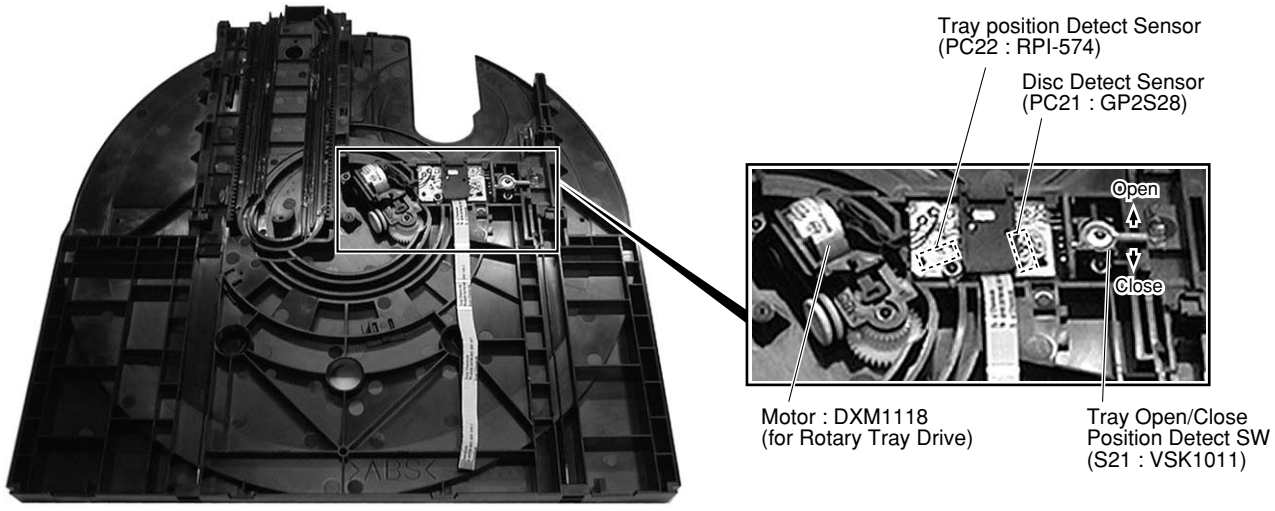
Adjust the height of Motor Pulley to 6.2mm.



7.1.6 TROUBLE SHOOTING FOR MECHANISM SECTION

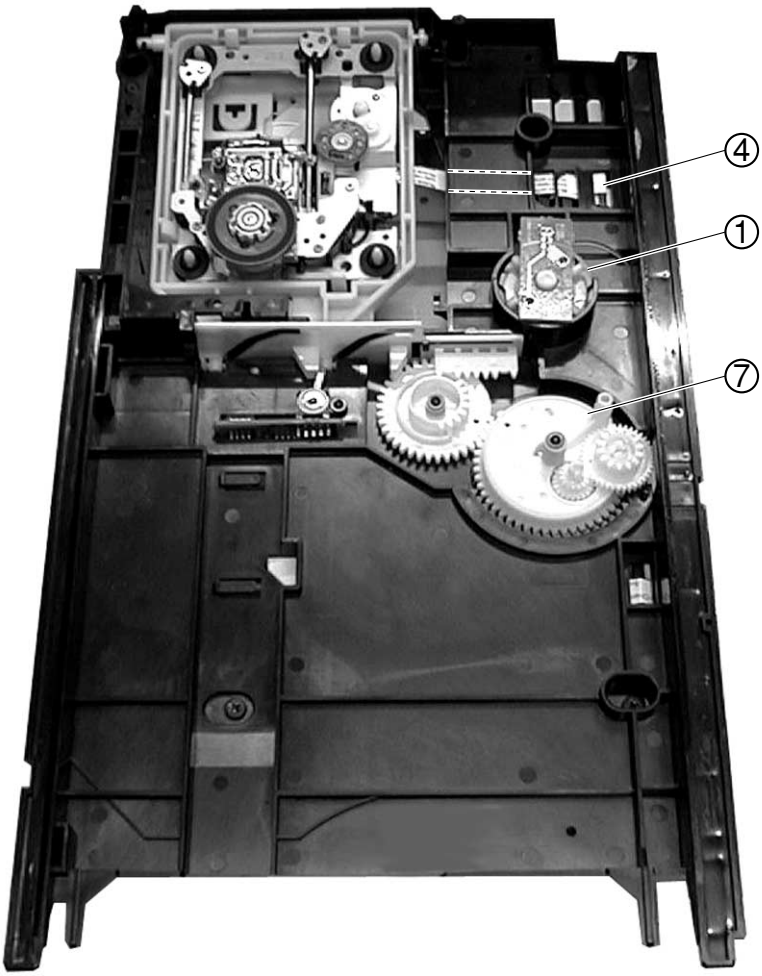
Location of Motors and Switches





Trouble Shooting

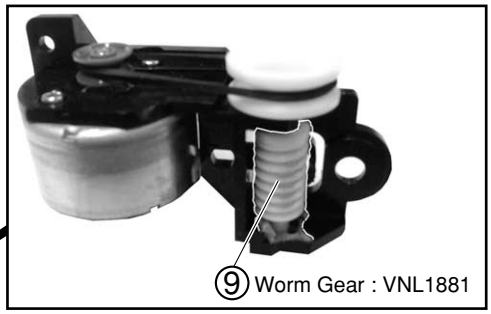
Condition	Condition	Trouble Point
Tray does not open. (Nothing works) POWER OFF Key → "OFF" indication does not disappear ⏏ (OPEN) key → "OPEN" indication does not disappear ► (PLAY) key → It becomes indication of "OPEN" from "NO DISC", and stop by the condition. (When a disc is not put in the Tray.)	Loading Motor is damage, disconnection or contact defectiveness.	①
Tray does not open. (Hear the clatter continuation sound.) It becomes the state that flashed indication of " ① ② ③ ④ ⑤ ".	Contact defectiveness of Flexible Cable (7P) or the connector comes off, etc.. Tray Open/Close Position SW (S21) is damage or contact defectiveness, etc..	② ③
Tray opens it in POWER ON freely, and stay by the state.	Contact defectiveness of Flexible Cable (8P) or the connector comes off, etc..	④
Rotary Tray does not stop at the home position. (May stop on the way of rotation suddenly.)	Tray Position Detect Sensor (PC22) is damage or contact defectiveness, etc..	⑤
"CHANGE" indication does not change in POWER ON, and Rotary Tray does not move. (In this case only opening and closing of Tray are possible.)	Motor for Rotary Tray Drive is damage, disconnection or contact defectiveness.	⑥
Hear the clatter sound in clamp of the disc.	A gear of Planet Base deviates.	⑦
Rotation of Rotary Tray does not stop in POWER ON. In this case indication more than two which seems to be " 1 2 ③ ④ 5 " lights, and abnormal indication appears.	Slit part of bottom of the Rotary Tray is damaged.	⑧
When Rotary Tray turns, hear the rattle and large sound.	Damage of Worm Gear or grease is insufficient.	⑨
Playback even if indicates it with "NO DISC". Take time till playbacks.	Disc Detect Sensor (PC21) is damage or contact defectiveness, etc..	⑩



④ Flexible Cable (8P)
(SMEB CN202 ↔ DVDM CN3)

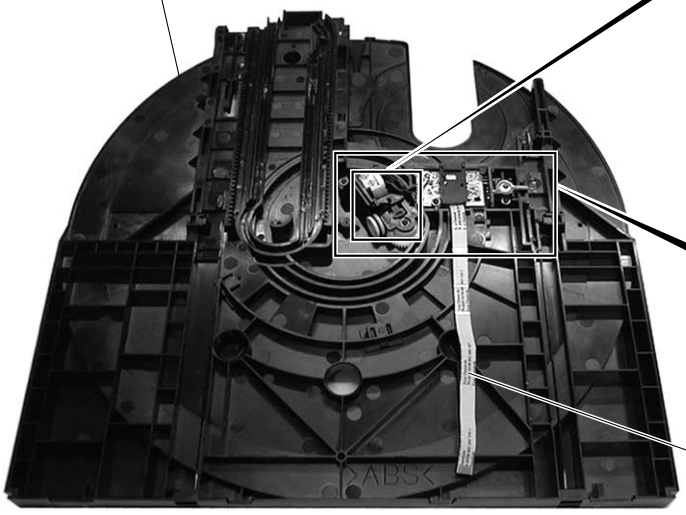
① Carriage Motor : VXM1033
(for LOADING)

⑦ Planet Base : VNL1874



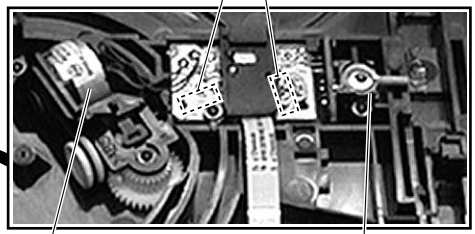
⑨ Worm Gear : VNL1881

⑧ Rotary Tray : VNK4729



⑤ Tray position Detect Sensor
(PC22 : RPI-574)

⑩ Disc Detect Sensor
(PC21 : GP2S28)



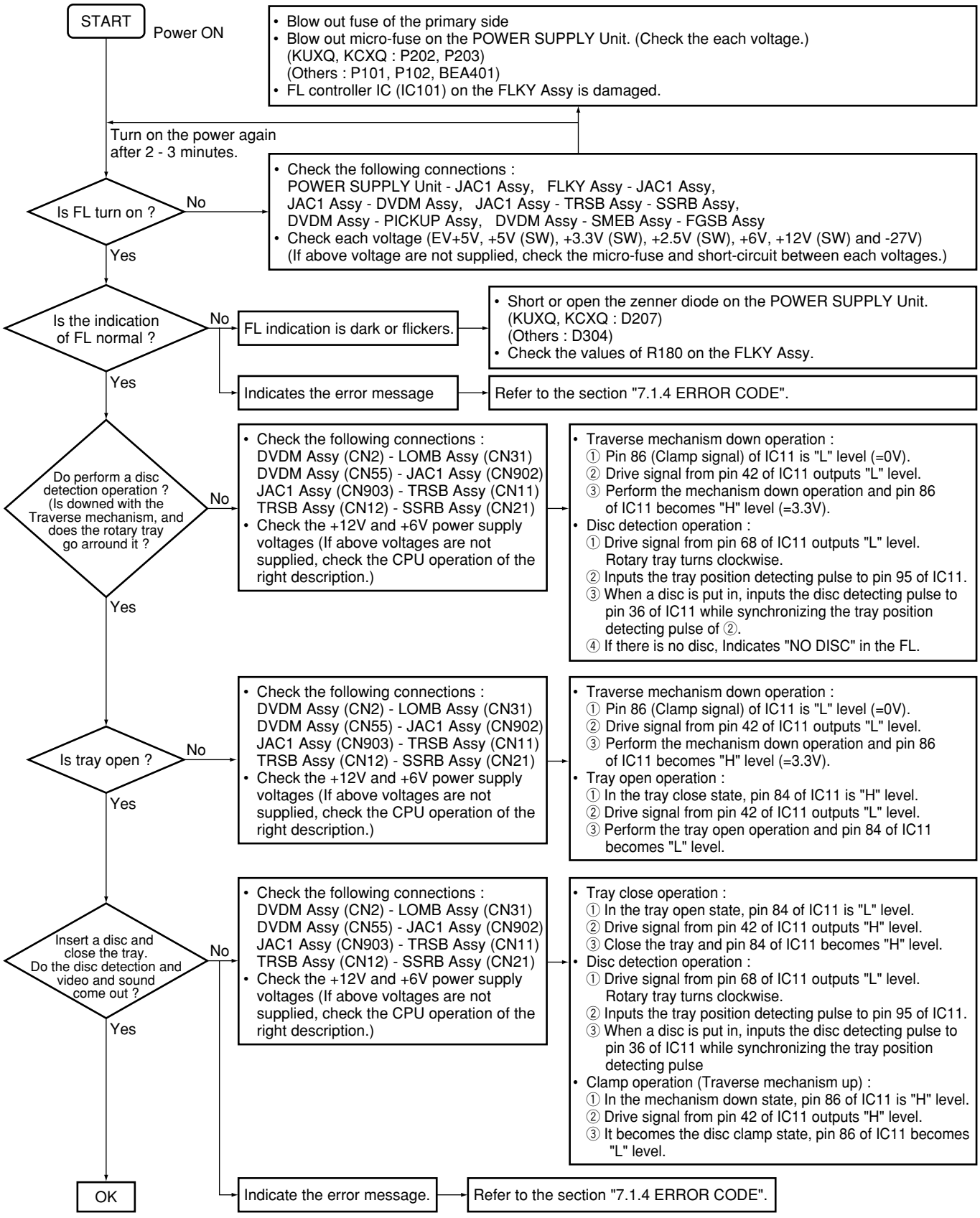
⑥ Motor : DXM1118
(for Rotary Tray Drive)

③ Tray Open/Close
Position Detect SW
(S21 : VSK1011)

② Flexible Cable (7P) : VDA1835
(TRSB CN12 ↔ SSRB CN21)

7.1.7 TROUBLE SHOOTING FOR ELECTRICAL SECTION

- No Power ON
- FL is not turned ON
- FL indication is abnormal
- No Play



7.2 PARTS

7.2.1 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

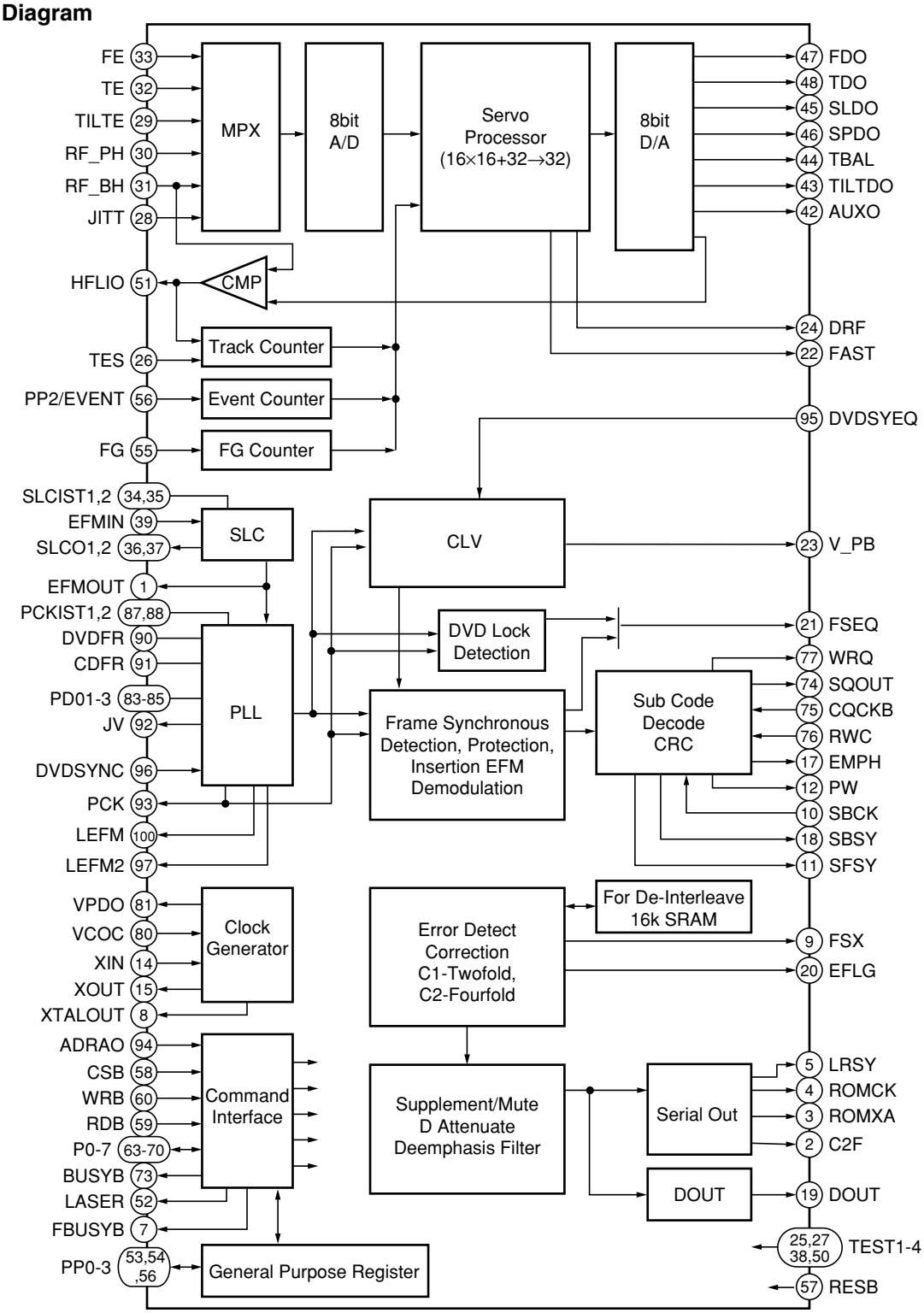
●List of IC

LC78652W, PD3410A, MB86373B, PE5185A

■ LC78652W (DVDM ASSY : IC2)

• Servo DSP IC

● Block Diagram



●Pin Function

No.	Pin Name	I/O	Function
1	EFMOUT	O	Output the state that was binary-stated value EFM
2	C2F	O	C2 flag output
3	ROMXA	O	CD-ROM data output
4	ROMCK	O	Shift clock output for CD-ROM data output
5	LRSY	O	L/R clock output for CD-ROM data output
6	PP3	I/O	General-purpose port input/output / DVD sync. signal input N ch-OD output
7	FBUSYB	O	Busy signal output of DSP process operation N ch-OD output
8	XTALOUT	O	External system clock output
9	FSX	O	CD 1 frame sync. signal output
10	SBCK	I	Subcode reading out clock input
11	SFSY	O	Frame sync. signal output of subcode
12	PW	O	Subcode P, Q, R, S, T, U, V and W output
13	VSS	–	GND pin
14	XIN	I	Connect a crystal resonator (16.9344MHz)
15	XOUT	O	Connect a crystal resonator
16	DVDD1	–	3.3V power supply of the oscillation circuit
17	EMPH	O	Monitor pin of the deemphasis
18	SBSY	O	Sync. signal output of the subcode block
19	DOUT	O	Audio EIAJ data output
20	EFLG	O	Error correction state monitor of the error correction C1 and C2
21	FSEQ	O	Detection monitor of the CD/DVD frame sync. signal
22	FAST	O	Playback speed monitor N ch-OD output
23	V_PB	O	Monitor output of the rough servo/CLV control
24	DRF	O	In focus monitor
25	TEST3	I	Test input 3
26	TES	I	Tracking error signal input
27	TEST2	I	Test input 2
28	JITT	I	Jitter quantity detecting signal input of EFM PLL
29	TILTE	I	Tilt error signal input
30	RF_PH	I	RF peak hold signal input
31	RF_BH	I	RF bottom hold signal input
32	TE	I	Tracking error signal input
33	FE	I	Focus error signal input
34	SLCIST1	–	Current setting pin 1 of the constant current charge pump for SLC
35	SLCIST2	–	Current setting pin 2 of the constant current charge pump for SLC
36	SLCO1	O	Control output 1 for SLC
37	SLCO2	O	Control output 2 for SLC
38	TEST1	I	Test input 1
39	EFMIN	I	EFM/EFM + input
40	AVDD	–	5V power supply of A/D and D/A for servo
41	AVSS	–	GND of A/D and D/A for servo
42	AUXO	O	DA auxiliary output
43	TILTDO	O	Tilt control signal output
44	TBAL	O	Tracking balance control signal output
45	SLDO	O	Sled control signal output
46	SPDO	O	Spindle control signal output
47	FDO	O	Focus control signal output
48	TDO	O	Tracking control signal output
49	VREF	–	Reference level of D/A for servo
50	TEST4	I	Test input 4

No.	Pin Name	I/O	Function
51	HFLIO	I/O	Mirror detection signal input/output
52	LASER	O	Output pin for laser ON/OFF control
53	PP0/DVD_CDB	I/O	General-purpose port input/output / Disc discrimination signal output
54	PP1/CRCERRB	I/O	General-purpose port input/output / Subcode CRC result signal output
55	FG	I	FG counter input
56	PP2/EVENT	I/O	General-purpose port input/output / Event counter input
57	RESB	I	Reset input
58	CSB	I	Chip select input
59	RDB	I	Internal state reading signal input
60	WRB	I	Command / data writing signal input
61	DVDD2	–	5V power supply
62	VSS	–	GND
63	P0	I/O	Command / data input/output
64	P1		
65	P2		
66	P3		
67	P4		
68	P5		
69	P6		
70	P7		
71	VSS	–	GND
72	DVDD1	–	3.3V power supply for internal
73	BUSYB	O	Busy signal output of command process
74	SQOUT	O	Serial output of subcode Q
75	CQCKB	I	Shift clock input for subcode Q data output
76	RWC	I	Update permission input of subcode Q
77	WRQ	O	Read out ready monitor of subcode Q
78	AVSS	–	PLL GND for internal system clock
79	VRPFR	–	VCO oscillation range setting of PLL for system clock
80	VCOC	I	Connect a PLL filter for system clock
81	VPDO	O	
82	AVDD	–	PLL 5V power supply for system clock
83	PDO1	I/O	PLL filter connection pin 1 for EFM playback
84	PDO2	I/O	PLL filter connection pin 2 for EFM playback
85	PDO3	I/O	PLL filter connection pin 3 for EFM playback
86	AVSS	–	PLL GND for EFM playback
87	PCKIST1	–	Current setting 1 of PLL constant current charge pump for EFM playback
88	PCKIST2	–	Current setting 2 of PLL constant current charge pump for EFM playback
89	AVDD	–	PLL 5V power supply for EFM playback
90	DVDFR	–	VCO oscillation range setting of PLL for EFM playback 1
91	CDFR	–	VCO oscillation range setting of PLL for EFM playback 2
92	JV	O	Jitter output of PLL clock for EFM playback
93	PCK	O	Bit clock output for EFM playback
94	ADRAO	I	Address input
95	DVDSYEQ	I	DVD synchronize pulse input
96	DVDSYNC	I	DVD synchronous signal input
97	LEFM2	O	Output the state that cut and out a signal which was binary-stated value EFM with PCK 2
98	DVDD1	–	3.3V power supply for I/O
99	VSS	–	GND
100	LEFM	O	Output the state that cut and out a signal which was binary-stated value EFM with PCK 1

■ PD3410A (DVDM ASSY : IC11)

• System Control IC

● Pin Function

No.	Mark	Pin Name	I/O	Function
1	XCS3/XCASL	XCS3	O	PD4995A (MY CHIP) chip select signal output
2	GND	GND	–	GND
3	CK	HCPUCK	O	N.C.
4	VCC	V+3D	–	V+3D
5	PICLK	–	I/O	N.C.
6	PIDATA	–	I/O	N.C.
7	GND	GND	–	GND
8	PORTH0	–	O	N.C.
9	PORTH1	–	O	N.C.
10	PORTH2	36MVH	O	BU2158F (Clock generator)
11	PORTH3	V_SEL2	O	Composite/S switching signal output of the skirt terminal [WY model]
12	VCC	V+3D	–	V+3D
13	PORTH4	–	O	N.C.
14	PORTH5	–	O	N.C.
15	PORTH6	–	O	N.C.
16	PORTH7	–	O	N.C.
17	GND	GND	–	GND
18	EXTAL	EXTAL	I	Connect a ceramic resonator
19	XTAL	XTAL	O	
20	VCC	V+3D	–	V+3D
21	PORTG0	XCSDF0	O	DAC chip select signal output (←XLAT3)
22	PORTG1	XCSDF1	O	Chip select signal output for audio DSP microcomputer interface (←XLT_DACS)
23	PORTG2	–	O	N.C.
24	PORTG3	–	O	N.C.
25	PORTG4	LFEON	O	Select the mix to the front L ch and R ch of LFE element
26	GND	GND	–	GND
27	PORTG5	6CHMD	O	Switch the DAC outputs 2ch / 6ch (←XDVRST2)
28	PORTG6	XDASP	O	DASP through DASP output / to AV-1 output
29	PORTG7	XAMUTE	O	Last stage mute signal output of the audio
30	PORTF0	44X48	O	DAC 44/48 FS switching signal output
31	PORTF1	–	I	N.C.
32	PORTF2	3DON	O	3D audio ON/bypass switching signal output
33	VCC	V+3D	–	V+3D
34	PORTF3	–	O	N.C.
35	PORTF4	XAVSRST	O	Sync. reset port
36	PORTF5	DSCSNS	O	Disc detection pulse output L : Disc exist

No.	Mark	Pin Name	I/O	Function
37	PORTF6	–	O	N.C.
38	PORTF7	XCSVE	O	Serial communication enable signal output of the video encoder [WY model]
39	GND	GND	–	GND
40	AVSS	GND	–	GND
41	AVCC	V+3D	–	V+3D
42	OUTA_P	LODRV	O	Loading drive output
43	VREF	V+3D	–	V+3D
44	OUTB_P	TEI	O	Tracking offset signal output
45	AVSS	GND	–	GND
46	AVSS	GND	–	GND
47	PORTE0	V_SEL	O	Component/composite switching signal output
48	PORTE1	–	I	N.C.
49	PORTE2	–	I	N.C.
50	PORTE3	FOFST1	I/O	Focus offset adjustment output 1
51	PORTE4	FOFST2	I/O	Focus offset adjustment output 2
52	PORTE5	XDFINH	I/O	Defect shunt signal output
53	PORTE6	DVD/XCD	O	DVD/CD switching signal output
54	PORTE7	LD1_ON	O	650 nm laser diode ON signal output
55	PORTD0	LD2_ON	O	780 nm laser diode ON signal output
56	VCC	V+3D	–	V+3D
57	PORTD1	DPD/TE	O	1 beam/3 beams switching signal output
58	PORTD2	AGOFF	O	AGC ON/OFF switching signal output of RF IC
59	PORTD3	XCD2X	O	Signal output for switching the double speed playback (VCD)
60	PORTD4	OEICG	O	OEIC gain switching signal output
61	GND	GND	–	GND
62	PORTD5	XMON	O	ON/OFF switching signal output of the spindle motor control output
63	PORTD6	–	O	N.C.
64	PORTD7	–	I	N.C.
65	PORTJ0	XDRVMUT	O	Driver mute output
66	PORTJ1	–	O	N.C.
67	PORTJ2	XDSPRST	O	Servo DSP reset
68	PORTJ3	SED0	I	Tray rotation drive
69	VCC	V+3D	–	V+3D
70	PORTJ4	TM_ENT	I	Test mode entry
71	PORTJ5	–	O	N.C.
72	PORTJ6	VSEL_SW	I	Component/composite SW input
73	PORTJ7	–	I	N.C.
74	PB0/TIOCA2	XCBUSY	I	Command busy input
75	PB1/TIOCB2	XABUSY	I	Auto-sequence busy input
76	PB2/TIOCA3	XINT2	I	Interrupt input 2 (AV-1)
77	VCC	V+3D	–	V+3D
78	PB3/TIOCB3	LT1	O	Communication response signal output to the FL controller
79	PB4/TIOCA4	SBSY	I	Subcode block sync. input
80	XMTEST	–	I	Test terminal (V+3D)
81	XCPUMD	–	I	Test terminal (V+3D)
82	XRES	XRESET	I	Reset input

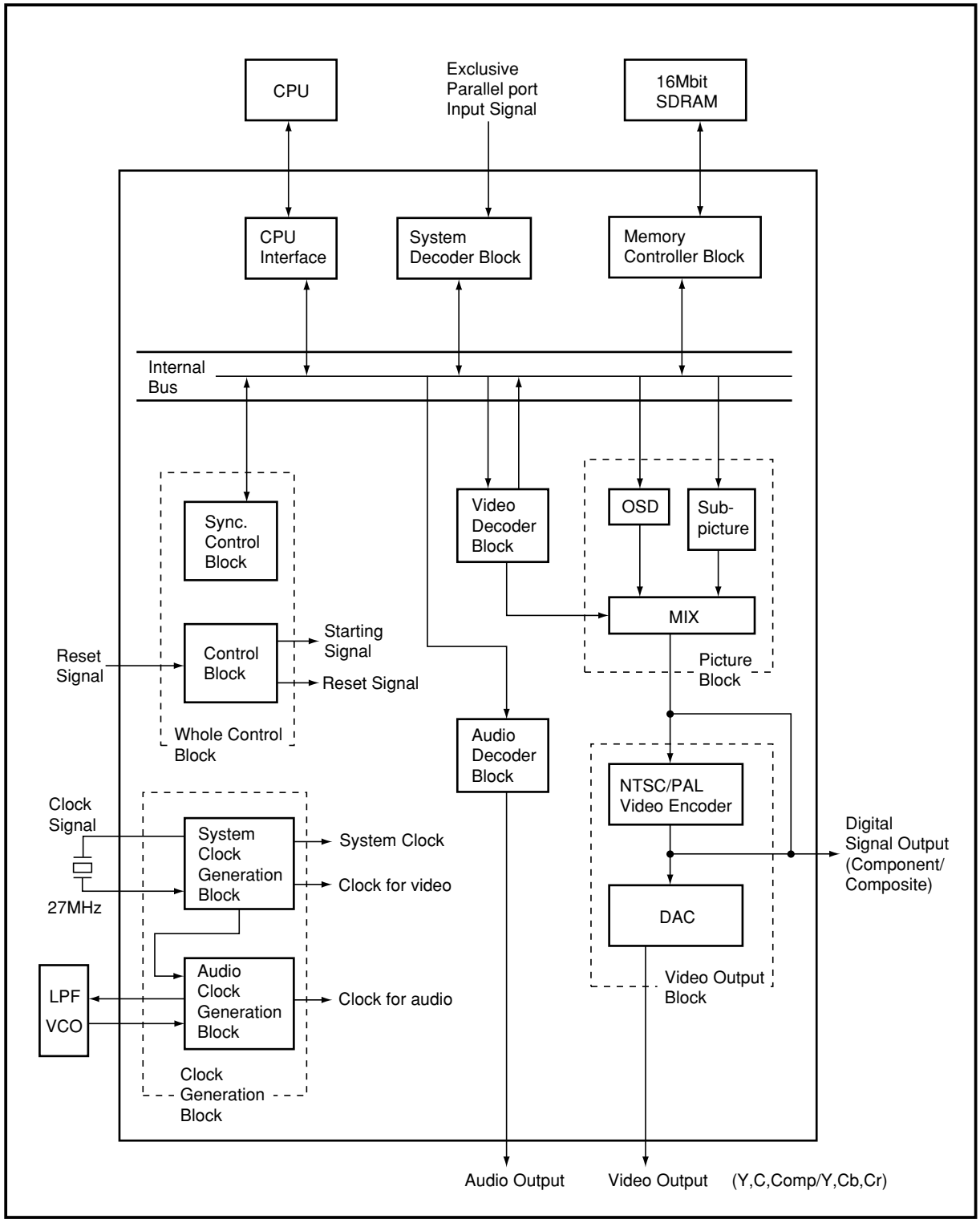
No.	Mark	Pin Name	I/O	Function
83	GND	GND	–	GND
84	AN0	LODPOS	I	Loading position input
85	AN1	SLDPOS	I	Slider position input
86	AN2	CLAMP	I	Clamp position SW input
87	AN3	NAP_SW	I	NTSC/AUTO/PAL SW input
88	AN4	XOEM	I	Input terminal of OEM model protection
89	AN5	LDDEAD	I	Input for LD current value display
90	AN6	–	I	N.C.
91	AN7	–	I	N.C.
92	Avref	V+3D	–	V+3D
93	AVCC	V+3D	–	V+3D
94	AVSS	GND	–	GND
95	PB5/TIOCB4	TRYPOS	I	Disc number count input
96	PB6/TIOCXA4/TCLKC	C2F	I	C2 error input
97	PB7/TIOCXB4/TCLKD	XRDY	I	Communication request input from the FL controller
98	PB8/RxD0	SSI	I	Serial data input (FL controller)
99	PB9/TxD0	SSO	O	Serial data output (FL controller)
100	VCC	V+3D	–	V+3D
101	PB10/RxD1	RXD	I	Data input of the RS-232C
102	PB11/TxD1	TXD	O	Data output of the RS-232C
103	PB12/XIRQ4/SCK0	SSCK	I/O	Serial clock output (FL controller)
104	PB13/XIRQ5/SCK1	XIRQL10	I	Interrupt input #0 (MY CHIP)
105	GND	GND	–	GND
106	PB14/XIRQ6	XIRQL11	I	Interrupt input #1 (MY CHIP)
107	PB15/XIRQ7	XINT0	I	Interrupt input #0 (AV-1)
108	PA0/XCS4/TIOCA0	XCS4	O	Servo DSP chip select signal output
109	PA1/XCS5/XRAS	–	O	N.C.
110	PA2/XCS6/TIOCB0	XCS6	O	AV-1 chip select signal output
111	XWAIT	XWAIT	I	Wait signal input
112	XWRL	XWRL	O	Write pulse output L
113	GND	GND	–	GND
114	XWRH	XWRH	O	Write pulse output H
115	XRD	XRD	O	Read pulse output
116	PA7/XBACK	XCURDET	I	Over-current detection signal input
117	PA8/XBREQ	CTS	I	RS-232C transfer permit input
118	PA9/XAH/XIRQOUT/ XADTRG	DTR	O	RS-232C transfer permit output
119	PA10/DPL/TIOCA1	XINT1	I	Interrupt input 1 (AV-1)
120	PA11/DPH/TIOCB1	THLD	I	Tracking hold signal input
121	VCC	V+3D	–	V+3D
122	PA12/XIRQ0/DACK0/ TCLKA	DACK0	O	DMA response output (MY CHIP)
123	PA13/XIRQ1/ XDREQ0/TCLKB	XDREQ0	I	DMA request input (MY CHIP)
124	PA14/XIRQ2/XDACK1	XDACK1	O	DMA response output (AV-1)
125	PA15/XIRQ3/XDREQ1	XDREQ1	I	DMA request input (AV-1)
126	AD0	D0	I/O	Data bus 0

No.	Mark	Pin Name	I/O	Function
127	GND	GND	–	GND
128	AD1	D1	I/O	Data bus 1
129	AD2	D2	I/O	Data bus 2
130	AD3	D3	I/O	Data bus 3
131	AD4	D4	I/O	Data bus 4
132	AD5	D5	I/O	Data bus 5
133	AD6	D6	I/O	Data bus 6
134	VCC	V+3D	–	V+3D
135	AD7	D7	I/O	Data bus 7
136	AD8	D8	I/O	Data bus 8
137	AD9	D9	I/O	Data bus 9
138	AD10	D10	I/O	Data bus 10
139	GND	GND	–	GND
140	AD11	D11	I/O	Data bus 11
141	AD12	D12	I/O	Data bus 12
142	AD13	D13	I/O	Data bus 13
143	AD14	D14	I/O	Data bus 14
144	VCC	V+3D	–	V+3D
145	AD15	D15	I/O	Data bus 15
146	A0 (XHBS)	A0	O	Address bus 0
147	A1	A1	O	Address bus 1
148	A2	A2	O	Address bus 2
149	GND	GND	–	GND
150	A3	A3	O	Address bus 3
151	A4	A4	O	Address bus 4
152	A5	A5	O	Address bus 5
153	A6	A6	O	Address bus 6
154	A7	A7	O	Address bus 7
155	A8	A8	O	Address bus 8
156	A9	A9	O	Address bus 9
157	A10	A10	O	Address bus 10
158	A11	A11	O	Address bus 11
159	A12	A12	O	Address bus 12
160	A13	A13	O	Address bus 13
161	A14	A14	O	Address bus 14
162	A15	A15	O	Address bus 15
163	A16	A16	O	Address bus 16
164	A17	A17	O	Address bus 17
165	VCC	V+3D	–	V+3D
166	A18	A18	O	Address bus 18
167	A19	A19	O	Address bus 19
168	A20	A20	O	Address bus 20 [RAM model]
169	A21	A21	O	N.C.
170	XNMI	XNMI	I	V+3D
171	GND	GND	–	GND
172	XCS10	–	O	N.C.
173	XCS20	XCS20	O	Chip select signal output of the flash ROM
174	XCS22	–	O	Chip select signal output of the GUI ROM [OEM model]
175	XCS23	XCS23	O	Chip select signal output of the SRAM
176	XCS2	–	O	N.C.

■ MB86373B (DVDM ASSY : IC18)

- **MPEG2 Decoder IC**

- **Block Diagram**



● Pin Function

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	CLKSEL	I	ON/OFF signal of PLL ("H" : ON, "L" : OFF)	27	VDD	–	2.5V power supply
2	DIGCPN7	O	Digital component signal output (MSB) Digital Y signal output (9-bit) (MSB)	28	DIGCOMP4	O	Digital composite signal output Digital C signal output
3	VSS	–	GND	29	DIGCOMP3		
4	DIGCPN6	O	Digital component signal output Digital Y signal output (9-bit)	30	DIGCOMP2		
5	DIGCPN5			31	DIGCOMP1		
6	DIGCPN4			32	DIGCOMP0		Digital composite signal output (LSB) Digital C signal output (LSB)
7	DIGCPN3			33	DACK	O	27 MHz clock output
8	DIGCPN2			34	N.C.	–	Non connection
9	DIGCPN1			35	VSSA3	–	GND (D/A converter)
10	VDD	–	2.5V power supply	36	ANAC	O	Analog color (C) output signal
11	DIGCPN0	O	Digital component signal output (LSB) Digital Y signal output (9-bit) (LSB)	37	VDDA3	–	2.5V power supply (for built-in D/A converter only)
12	RBSEL	O	Cb and Cr discrimination signal at the digital component signal output. LSB at the digital Y signal output.	38	VSSA2	–	GND (D/A converter)
13	XHS	O	Horizontal sync. output signal	39	ANAY	O	Analog luminance (Y) output signal
14	XVS	O	Vertical sync. output signal	40	VDDA2	–	2.5V power supply (for built-in D/A converter only)
15	VSS	–	GND	41	VREF	I	Reference voltage for D/A converter
16	XRESET	I	LSI reset signal	42	VRO	O	Internal current setting pin of D/A converter
17	XLDCSYNC	I	External sync. signal input (LD mode)	43	VDDA4	–	2.5V power supply (for built-in D/A converter only)
18	KEY	O	KEY signal for LD and OSD overlay (LD mode)	44	VSSA1	–	GND (D/A converter)
19	PD	O	Phase comparison result output signal of horizontal sync. (LD mode)	45	ANACOMP	O	Analog composite output signal
20	VFLD	O	Field discrimination signal at the digital signal output H : even field L : odd field	46	VDDA1	–	2.5V power supply (for built-in D/A converter only)
21	DIGCOMP9	O	Digital composite signal output (MSB) Digital C signal output (MSB)	47	BF	O	Burst flag signal
22	DIGCOMP8	O	Digital composite signal output Digital C signal output	48	XBLK	O	H/V composite blanking signal
23	DIGCOMP7			49	TEST4	O	Normally, set to "open".
24	DIGCOMP6			50	VSS	–	GND
25	DIGCOMP5			51	TEST0	I	Normally, set to "open".
26	VSS	–	GND	52	TEST1	I	"L" status normally

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
53	DAIIN	I	Digital data input of external input (SPDIF)	92	HADRS10	I	CPU address bus signal (MSB)
54	CDDATA	I	Audio data input of external input (correspond to CD)	93	HADRS9	I	CPU address bus signal
55	CDLR	I	Data channel clock input of external input (correspond to CD)	94	HADRS8		
56	CDBCK	I	Data clock input of external input (correspond to CD)	95	HADRS7		
57	AODATA3	O	Audio decode data	96	VSS	–	GND
58	AODATA2			97	VDD	–	2.5V power supply
59	AODATA1			98	HADRS6	I	CPU address bus signal
60	VSS	–	GND	99	HADRS5		
61	VDD	–	2.5V power supply	100	HADRS4		
62	AODATA0	O	Audio decode data	101	HADRS3		
63	AOPCM	O	Digital audio interface output (compression data)	102	HADRS2		CPU address bus signal (LSB)
64	AODAI	O	Digital audio interface output (decode data)	103	HDATA15	I/O	CPU data bus signal (MSB)
65	LRCK	O	Data channel clock for D/A and digital filter	104	HDATA14		CPU data bus signal
66	AOMCK	O	Master clock for D/A and digital filter	105	HDATA13		
67	BCK	O	Bit clock for D/A and digital filter	106	HDATA12		
68	TEST2	I	Normally, set to "open".	107	VSS	–	GND
69	TEST3			108	HDATA11	I/O	CPU data bus signal
70	NC	–	Non connection	109	HDATA10		
71	XDSPRST	I	Normally, set to "open".	110	HDATA9		
72	VSS	–	GND	111	HDATA8		
73	TEST5	O	Normally, set to "open".	112	HDATA7		
74	NC	–	Normally, set to "open".	113	HDATA6		
75	NC			114	VDD	–	2.5V power supply
76	NC			115	HDATA5	I/O	CPU data bus signal
77	NC			116	HDATA4		
78	SD7	I	Parallel data input	117	HDATA3		
79	VDD	–	2.5V power supply	118	HDATA2		
80	SD6	I	Parallel data input	119	VSS	–	GND
81	SD5			120	HDATA1	I/O	CPU data bus signal
82	SD4			121	HDATA0		CPU data bus signal (LSB)
83	SD3			122	BUSSEL	I	Bus width selection signal (0 : 8-bit bus, 1 : 16-bit bus)
84	SD2			123	XOSDACK	I	OSD data acknowledge signal
85	VSS	–	GND	124	XOSDREQ	O	OSD data request signal
86	SD1	I	Parallel data input	125	HCPUSEL1	I	CPU selection signal (00 :SPARC, 01 :86 system, 10 :68 system, 11 :Reserve)
87	SD0			126	HCPUSEL0		
88	XERR	I	Error input signal	127	XINT3	O	Interrupt request signal to the CPU
89	XSACK	I	Acknowledge signal	128	XINT2		
90	XTEST	I	Set to "H" at normal use	129	XINT1		
91	SREQ	O	Data request signal	130	VSS	–	GND

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
131	VDD	–	2.5V power supply	170	XMDRCAS	O	CAS signal for SDRAM
132	XINT0	O	Interrupt request signal to CPU	171	XMDRDQM1	O	Input mask / output enable signal for SDRAM
133	XEXTRDY	O	SPARC, 68 system : Ready signal to CPU 86 system : Acknowledge (ACK) signal to CPU	172	VSS	–	GND
134	HRW	I	CPU read / write signal	173	XMDRWE	O	Write enable signal for SDRAM
135	HCLKIN	I	Host clock input	174	XMDRDQM0	O	Input mask / output enable signal for SDRAM
136	XHCS	I	LSI chip select signal	175	MDRDAT8	I/O	Data bus signal for SDRAM
137	XHAS	I	SPARC, 68 system : CPU address strobe 86 system : CPU address status	176	VSS	–	GND
138	XHBE3	I	CPU byte enable signal	177	MDRDAT7	I/O	Data bus signal for SDRAM
139	XHBE2			178	MDRDAT9		
140	XHBE1			179	MDRDAT6		
141	XHBE0			180	MDRDAT10		
142	VSS	–	GND	181	MDRDAT5		
143	MDRADR4	O	Address signal for SDRAM	182	VSS	–	GND
144	MDRADR3			183	VDD	–	2.5V power supply
145	MDRADR5			184	MDRDAT11	I/O	Data bus signal for SDRAM
146	MDRADR2			185	MDRDAT4		
147	VDD	–	2.5V power supply	186	MDRDAT12		
148	VSS	–	GND	187	MDRDAT3		
149	MDRADR6	O	Address signal for SDRAM	188	MDRDAT13		
150	MDRADR1			189	VSS	–	GND
151	MDRADR7			190	MDRDAT2	I/O	Data bus signal for SDRAM
152	MDRADR0		Address signal for SDRAM (LSB)	191	MDRDAT14		
153	MDRADR8		Address signal for SDRAM	192	MDRDAT1		
154	VSS	–	GND	193	MDRDAT15		Data bus signal for SDRAM (MSB)
155	TEST6	I	"L" status normally	194	MDRDAT0	I/O	Data bus signal for SDRAM (LSB)
156	TEST7			195	VSS	–	GND
157	TEST8			196	N.C.	–	Non connection
158	TEST9			197	ICK27M	I	System clock input
159	MDRADR10	O	Address signal for SDRAM	198	VSS	–	GND
160	MDRADR9			199	OCK27M	O	System clock output
161	MDRADR11		Address signal for SDRAM (MSB)	200	VSSA(VCO)	–	GND (for VCO only)
162	XMDRCS	O	Chip select signal for SDRAM	201	VDDA(VCO)	–	2.5V power supply (for VCO only)
163	MDRCKE	O	Clock enable signal for SDRAM	202	ILPF	O	PLL block inverter output for audio
164	VSS	–	GND	203	MLPF	I	PLL block inverter input for audio
165	VDD	–	2.5V power supply	204	OLPF	O	Phase detector output for audio
166	XMDRRAS	O	RAS signal for SDRAM	205	OVCO	I	VCO input for audio clock
167	MDRCLK	O	Clock output signal for SDRAM	206	VSS	–	GND
168	VSS	–	GND	207	XPLLRST	I	PLL section reset signal
169	MDRCLKIN	I	Clock input signal for SDRAM	208	XSYNCRST	I	SYNC reset signal

■ PE5185A (FLKY ASSY : IC101)

• FL Control IC

● Pin Function

No.	Mark	Pin Name	I/O	Function	Active
1	P94	G7	O	FL timing output	H: ON
2	P93	G6			
3	P92	G5			
4	P91	G4			
5	P90	G3			
6	P81	G2			
7	P80	G1			
8	VDD	(5V)	–	–	
9	P27	FLSET1	I	FL tube setting	
10	P26	FLSET2			
11	P25	KEYSET	I	Key division number setting	
12	P24	(NC)	O	–	
13	P23	XREADY	O	Communication handshaking line with system control IC	L: Communication permission
14	P22	SCK	I/O	Communication clock output with system control IC	
15	P21	SO	I/O	Communication data output with system control IC	
16	P20	SI	I	Communication data input with system control IC	
17	RESET	RESET IN	I	Reset input	L: Reset
18	P74	DISC5 LED	O	Disc No. LED ON/OFF	L: ON
19	P73	DISC4 LED			
20	AVSS	(GND)	–	–	
21	P17	(GND)	I	(Unused)	
22	P16	(GND)			
23	P15	–	I	–	
24	P14	KIN2	I	Key input	
25	P13	KIN1			
26	P12	KIN0			
27	P11	MS1	I	Inducing distinction input	
28	P10	MS0	I	Model distinction input	
29	AVDD	(5V)	–	–	
30	AVREF	(5V)	–	–	
31	P04	(GND)	I	(Unused)	
32	XT2	(NC)	–	–	
33	VSS	(GND)	–	–	
34	X1	X1	I	Microcomputer clock connection	
35	X2	X2	–		
36	P37	(NC)	O	–	
37	P36				
38	P35				
39	P34	(GND)	I	Microphone existence detection [RAM model]	H: Microphone having
40	P33	(NC)	O	–	

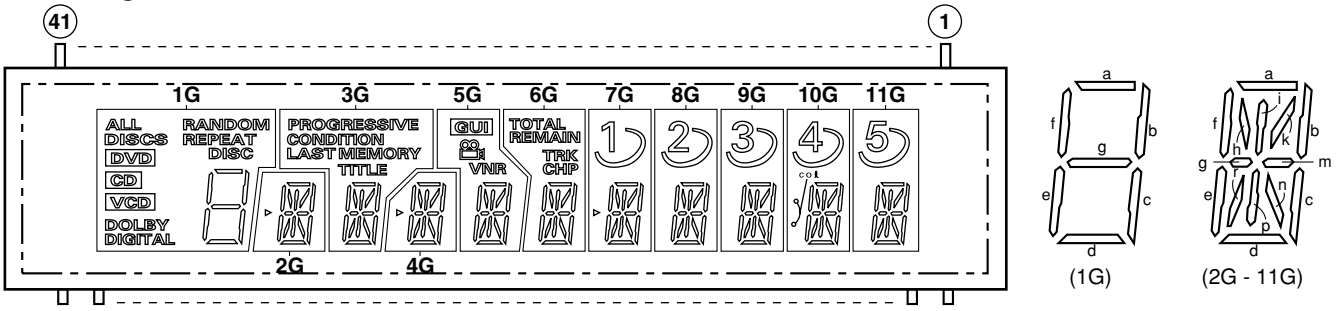
No.	Mark	Pin Name	I/O	Function	Active
41	P32	POWER ON	O	SW 5V ON/OFF	H: ON
42	P31	RESET OUT	O	System reset output	L: Reset
43	P30	(NC)	O	–	
44	P03	TES	I	Setting when system control IC is debugged	H: At debugging
45	P02	ON POWER	I	STBY/POWER ON switch at the time of FL control IC standing up	L: STBY
46	P01	LT	I	Communication handshaking line with system control IC	H: Communication permission
47	P00	SEL IR	I	Remote control signal input	
48	IC	IC	–	–	
49	P72	DISC3 LED	O	Disc No. LED ON/OFF	L: ON
50	P71	DISC2 LED			
51	P70	DISC1 LED			
52	VDD	(5V)	–	–	
53	P127	P. ON LED	O	STANDBY LED ON/OFF	H: ON
54	P126	OEM	O	OEM model distinction input	H: OEM
55	P125	LED (DVD)	O	FL OFF LED ON/OFF	H: ON
56	P124	LED (CD MODE)	O	CD mode LED ON/OFF	H: ON
57	P123	LED (VNR)		VNR LED ON/OFF [DV-C603, DV-C36]	
58	P122	P18	O	FL segment output	H: ON
59	P121	P17			
60	P120	P16			
61	P117	P15			
62	P116	P14			
63	P115	P13			
64	P114	P12			
65	P113	P11			
66	P112	P10			
67	P111	P9			
68	P110	P8			
69	P107	P7			
70	P106	P6			
71	VLOAD	-27V	–	Input for -27V	H: ON
72	P105	P5	O	FL segment output	H: ON
73	P104	P4			
74	P103	P3			
75	P102	P2			
76	P101	P1			
77	P100	G11	O	FL timing output	H: ON
78	P97	G10			
79	P96	G9			
80	P95	G8			

7.2.2 FL DISPLAY

■ VAW1058 (FLKY ASSY : V101)

• FL DISPLAY

● Pin Assignment



● Anode Connection

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G
P1	e	r	r	r	r	r	r	r	r	r	r
P2	d	n	n	n	n	n	n	n	n	n	n
P3	c	g	g	g	g	g	g	g	g	g	g
P4	a	a	a	a	a	a	a	a	a	a	a
P5	g	b	b	b	b	b	b	b	b	b	b
P6	b	k	k	k	k	k	k	k	k	k	k
P7	f	h	h	h	h	h	h	h	h	h	h
P8	ALL	f	f	f	f	f	f	f	f	f	f
P9	S	j	j	j	j	j	j	j	j	j	j
P10	DISC (DISC S)	m	m	m	m	m	m	m	m	m	m
P11	DVD	c	c	c	c	c	c	c	c	c	c
P12	CD	p	p	p	p	p	p	p	p	p	p
P13	VCD	e	e	e	e	e	e	e	e	e	e
P14	DOLBY DIGITAL	d	d	d	d	d	d	d	d	d	d
P15	DISC	▷	TITTLE	▷	VNR	CHIP	▷	—	—	col	—
P16	REPEAT	—	LAST MEMORY	—		TRK					
P17	RANDOM	—	CONDITION	—	GUI	REMAIN	1	2	3	4	5
P18	—	—	PROGRESSIVE	—	—	TOTAL	—	—	—	—	—

● Pin Connection

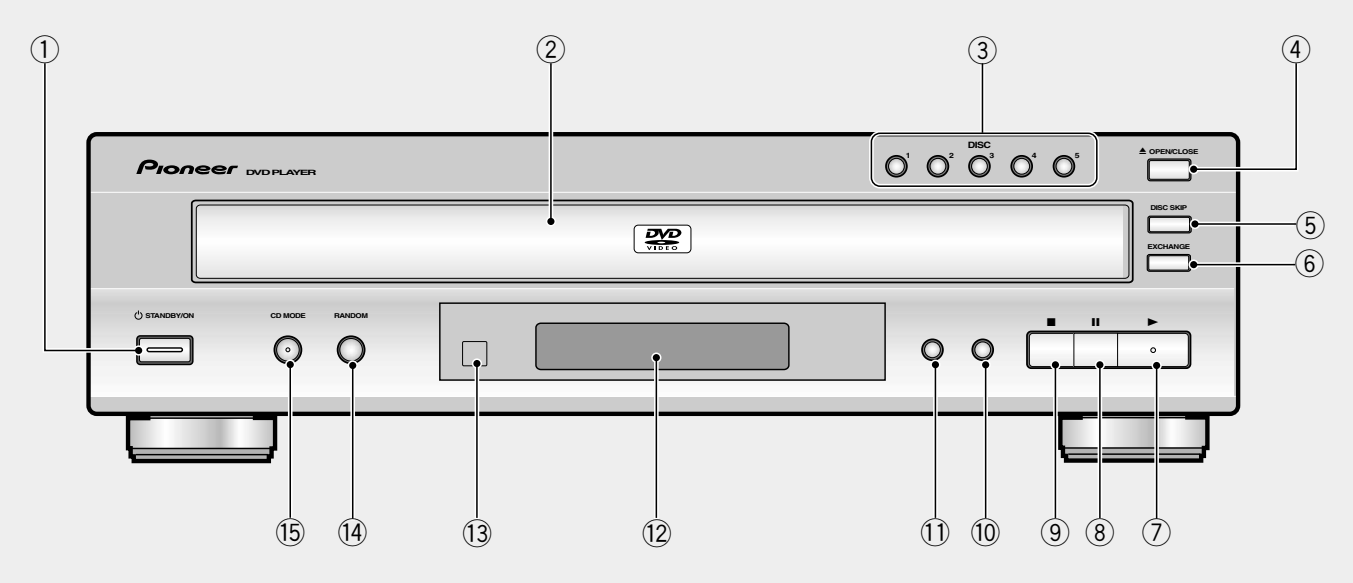
Pin No.	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21
Connection	F2	F2	NP	NP	P18	P17	P16	P15	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2
Pin No.	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
Connection	P1	NX	NX	11G	10G	9G	8G	NX	NX	7G	6G	5G	4G	3G	2G	1G	NP	NP	F1	F1	

Note (1) F1, F2 : Filament
(2) NP : No pin
(3) NX : No extend pin
(4) DL : Datum Line
(5) 1G to 7G : Grid

8. PANEL FACILITIES AND SPECIFICATIONS

8.1 PANEL FACILITIES

Front Panel



① **⏻ STANDBY/ON button**
Press to switch the player on or to put in standby .

② **Disc tray**
When loading a disc, place it in the disc tray with the label side facing up.

③ **DISC buttons**
Use to select discs in the player directly.

④ **⏏ OPEN/CLOSE button**
Press to open and close the disc tray.

⑤ **DISC SKIP button**
During playback, press to start playing the next disc in the player.
If the disc tray is open while no disc is playing, the tray rotates one disc space.
If the disc tray was opened using the **EXCHANGE** button, then pressing **DISC SKIP** rotates the disc tray two disc spaces.

⑥ **EXCHANGE button**
Press during playback to open the disc tray without stopping playback. Press again to close the disc tray.

⑦ **► (play) button**
Press to start or resume playback.

⑧ **II (pause) button**
Press during playback to pause. Press again to resume playback.

⑨ **■ (stop) button**
Press to stop playback. Pressing once enables playback to resume from a point shortly before the location where it stopped. Pressing twice causes the disc to return to the beginning of the disc if playback starts again.

⑩ **►► ►►| (forward) button**
Press to advance to chapters/tracks. Press and hold to perform fast-forward scanning.

⑪ **|◄◄ ◄◄ (reverse) button**
Press to go back to previous chapters/tracks. Press and hold to perform reverse playback scanning.

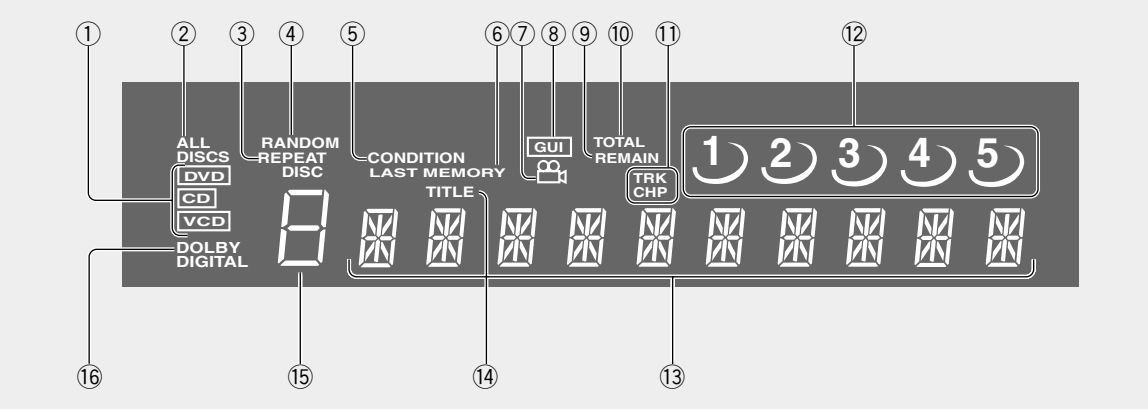
⑫ **Display window**
Displays system information.

⑬ **Remote sensor**
Point the remote control toward the remote sensor to operate the player.

⑭ **RANDOM button**
Press to play discs, titles, chapters or tracks in random order.

⑮ **CD MODE button and indicator**
Switches CD mode on/off. The indicator lights when on.

Display Window



① **DVD indicator**
Lights when a DVD is loaded.

CD indicator
Lights when an audio CD is loaded.

VCD indicator
Lights when a Video CD is loaded.

② **1 DISC/ALL DISCS indicator**
Lights during random or repeat play. If ALL Discs is selected, **ALL DISCS** lights; if 1 Disc is selected, **DISC** lights.

③ **REPEAT indicator**
Indicates that the Repeat function is on.

④ **RANDOM indicator**
Indicates that the Random function is on.

⑤ **CONDITION indicator**
Indicates that Condition Memory settings are memorized for the currently loaded DVD.

⑥ **LAST MEMORY indicator**
Indicates the Last Memory location is recorded in memory for the currently loaded DVD or Video CD.

⑦ **(angle) Indicator**
Indicates Multi-Angle playback is in progress.

⑧ **GUI indicator**
Indicates an on-screen menu operation is being performed.

⑨ **REMAIN indicator**
Indicates that the remaining playback time of a title or chapter/track is being displayed.

⑩ **TOTAL indicator**
Indicates that the total number of titles/chapters or tracks is being displayed.

⑪ **TRK indicator**
Indicates a track number is being displayed.

CHP indicator
Indicates a chapter number is being displayed.

⑫ **Disc tray/Disc indicator**
◡ means that a disc is loaded in that position. In CD mode, ◡ indicates a CD. (However, if the player has not yet determined whether a disc is loaded it also lights.)

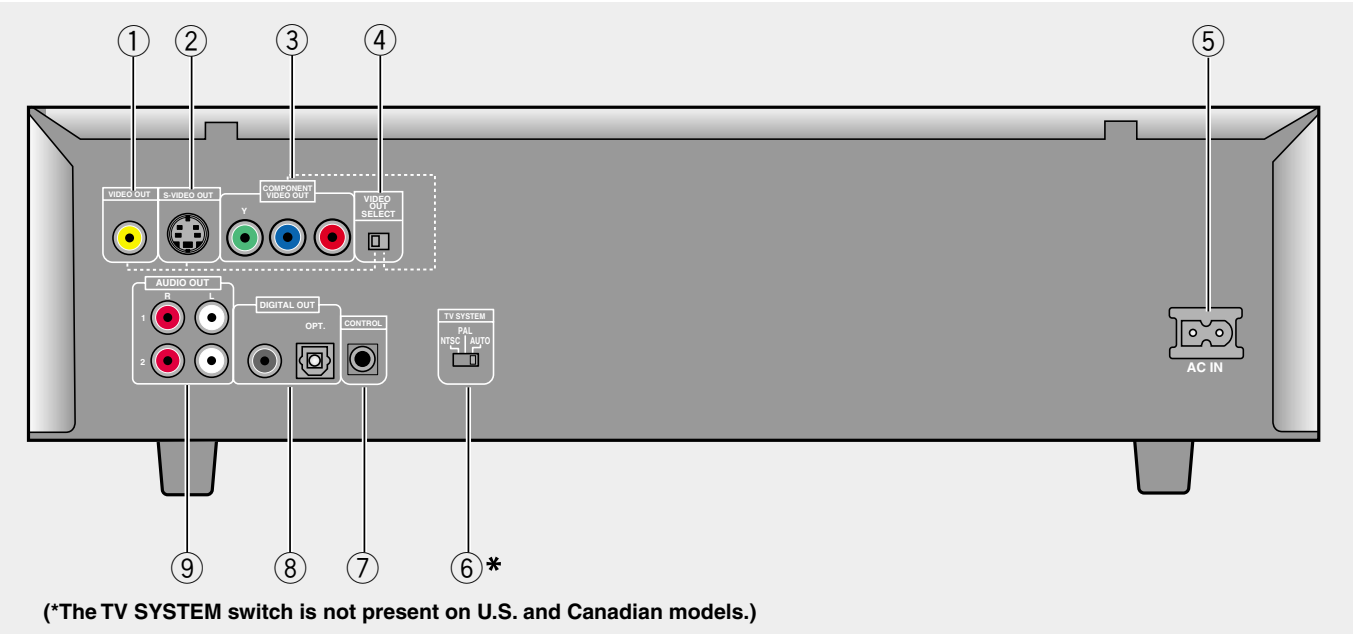
⑬ **Counter display**
Displays the playback mode, type of disc, title and chapter/track numbers, playback time, etc.

⑭ **TITLE indicator**
Indicates a title number is being displayed.

⑮ **DISC number indicator**
Shows the disc number currently in the play position.

⑯ **DOLBY DIGITAL indicator**
Indicates Dolby Digital audio playback.

Rear Panel



(*The TV SYSTEM switch is not present on U.S. and Canadian models.)

① **VIDEO OUT jack**

Connect to the video input on a TV or monitor or AV amplifier or receiver with video input capability.
When using this output, be sure to set **VIDEO OUT SELECT** to the left position.

② **S-VIDEO OUT jack**

If your TV or monitor has an S-video input, clear picture reproduction is possible by connecting the player to your TV or monitor via the S-Video jack.
When using this output, be sure to set **VIDEO OUT SELECT** to the left position.

③ **COMPONENT VIDEO OUT jacks**

If your TV or monitor has component video inputs, you can produce a higher quality picture on your TV or monitor by connecting to the component video outputs on this unit. When using these jacks, be sure to set **VIDEO OUT SELECT** to the right position.

④ **VIDEO OUT SELECT switch**

Use to set which output is used to output the video signals. Select either video/S-video or component video signal output depending on the connections you make.

⑤ **AC IN power cord connection terminal (plug varies with the country/region, so may not match the illustration)**

Use to connect the power cord to the wall outlet.

⑥ **TV SYSTEM switch* (except for U.S. and Canadian models)**

Use to change the TV signal mode to either PAL or NTSC according to the type of TV and disc to be used. When the switch is in the **AUTO** position, the player outputs the format on the disc as is.

⑦ **CONTROL IN jack**

Use to connect this player to another component bearing the Pioneer mark. This lets you control this unit as though it were a component in a system. Player operations are then performed by pointing the remote control at the component that the player is connect to.

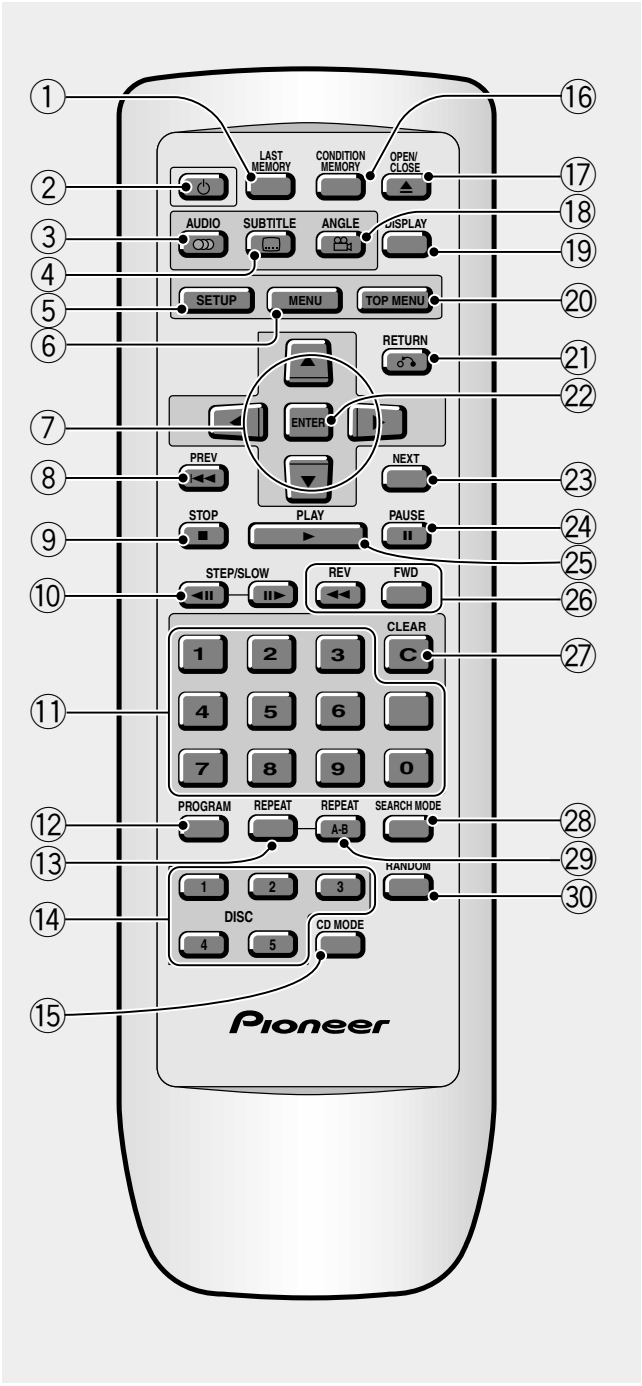
⑧ **DIGITAL OUT jacks (coaxial, optical (OPT.))**

Use to output the digital audio signal recorded on discs. You can output the digital signal via either coaxial or optical output jack to an AV amplifier or receiver.

⑨ **AUDIO OUT jacks**

Use to output two-channel audio (analog) to the audio stereo inputs on a TV or stereo amplifier. If you are connecting to a receiver that has both digital and analog input jacks for DVD player connection, it may be beneficial to make both connections.

Remote Control Unit



(Buttons indicated with * are used for menu operation.)

① **LAST MEMORY button**

You can resume DVD or Video CD playback from the point you last watched even if the disc is removed from the player. Press **LAST MEMORY** during playback to set a Last Memory point. When you want to resume playback of that disc, press **LAST MEMORY** in the stop mode and playback starts from the memorized point. Last Memory locations can be stored for up to 5 DVDs and 1 Video CD.

② **⏻ (standby/on) button**

Press to switch the player on or to put in standby.

③ **AUDIO button**

Press repeatedly to select one of the audio languages programmed on a DVD.

For Video CD and CD, each press changes the audio output as follows.

Stereo → 1/L (Left) → 2/R (Right)

④ **SUBTITLE button**

Press repeatedly to select one of the subtitle languages programmed on a DVD or to turn the subtitles off.

⑤ **SETUP button***

Press when the player is in either play or stop mode to open and close the Setup screen.

⑥ **MENU button***

Use to display or close the DVD menu screen.

⑦ **Cursor buttons (◄/►/▲/▼)***

Use to move through the options on menu screens and to change settings.

⑧ **PREV ⏮ button (previous)**

During playback, press **PREV ⏮** to go back to a previous chapter/track.

⑨ **STOP ■ button**

Press to stop playback. Pressing once enables playback to resume from a point shortly before the location where it was stopped. Pressing twice causes the disc to return to the beginning of the disc when playback starts again.

⑩ **STEP/SLOW ◄II/II► buttons**

Press **STEP/SLOW II►** during playback to view slow playback. In pause mode, press **STEP/SLOW II►** to advance DVDs and Video CDs frame by frame and **STEP/SLOW ◄II** to back up a few frames at a time.

⑪ **Number buttons (1-9, 0, +10)***

Use to perform direct title and chapter/track searches, and to input numerical values.

⑫ **PROGRAM button**

You can program titles, chapters, or tracks to play back in a desired order. Programs can be a maximum of 24 steps.

⑬ **REPEAT button**

During playback of a DVD, press once to repeat playback of the current chapter, and twice to repeat playback of the current title. During playback of a Video CD or CD, press once to repeat playback of the current track, twice to repeat playback of the current disc, and 3 times to repeat all the discs loaded in the player.

⑭ **DISC buttons (1-5)**

Use to select discs in the player directly.

⑮ **CD MODE button**

Switches CD mode on/off.

⑯ **CONDITION MEMORY button**

You can store in memory the settings for up to 15 DVDs. Press **CONDITION MEMORY** during DVD playback to memorize the settings.

⑰ **OPEN/CLOSE ⏏ button**

Press to open or close the disc tray.

⑱ **ANGLE button**

Some DVDs are recorded with various camera angle playback options. Press **ANGLE** repeatedly to display different camera angles.

⑲ **DISPLAY button**

Press during playback to display statistical disc information. Press repeatedly to display different information.

⑳ **TOP MENU button***

Press to call up the top menu programmed on the DVD. Depending on the DVD, the top menu may be identical to the DVD menu.

㉑ **RETURN button***

Use to go one menu back (current settings are maintained). Use **RETURN** when you do not want to change the option setting in a menu.

㉒ **ENTER button***

Use to implement settings selected with the cursor buttons or to set items highlighted in a menu.

㉓ **NEXT ⏭ button**

During playback, press **NEXT ⏭** to advance to the next chapter/track.

㉔ **PAUSE ⏸ button**

Press to pause playback of a disc. Press again to resume playback.

㉕ **PLAY ► button**

Press to start disc playback.

㉖ **◄◄ REV/FWD ►► (fast reverse/forward) buttons**

During playback of DVD and Video CD, press **FWD ►►** to perform fast forward scanning. Press **REV ◄◄** to perform fast reverse scanning of DVD and Video CD. When a CD is loaded, audio scanning is performed.

㉗ **CLEAR button (C)**

Works in conjunction with a number of player functions. Use to cancel repeat and random playback, and to edit programs.

㉘ **SEARCH MODE button**

Press to perform a title, chapter/track or elapsed time search.

㉙ **REPEAT A-B button**

Press at the beginning and end of the section you want to repeat or to mark a location you want to return to.

㉚ **RANDOM button**

Press to play discs, titles, chapters or tracks in random order.

8.2 SPECIFICATIONS

General

System ..... DVD system, Compact Disc digital video system and Compact Disc digital audio system

Power requirements

U.S. and Canadian models ..... AC 120 V, 60 Hz

Other models ..... AC 110-127/220-240 V, 50/60 Hz

Power consumption

U.S. and Canadian models ..... 11 W

Other models ..... 12 W

Power consumption in standby mode ..... less than 1 W

Weight ..... 4.7 kg (10 lb 6 oz)

Dimensions ..... 420 (W) x 375 (D) x 128 (H) mm ($16\ ^{9}/_{16}$ (W) x $14\ ^{13}/_{16}$ (D) x $5\ ^{1}/_{16}$ (H) in.) (Not including protruding cables, etc.)

Operating temperature ..... +5°C to +35°C (+41°F to +96°F)

Operating humidity ..... 5% to 85% (no condensation)

S-Video output

Y (luminance) - Output level ..... 1 Vp-p (75 Ω)

C (color) - Output level ..... 286 mVp-p (75 Ω)

Jack ..... S-VIDEO jack

Video output

Output level ..... 1 Vp-p (75 Ω)

Jack ..... RCA jack

Component video output

(Y, P_B, P_R)

Output level ..... Y: 1.0 Vp-p (75 Ω)
P_B, P_R: 0.7 Vp-p (75 Ω)

Jacks ..... RCA jacks

Audio output (2 pairs)

Output level ..... 200 mVrms (1 kHz, –20 dB)

Number of channels 2

Jacks ..... RCA jacks

Digital audio characteristics

Frequency response ..... 4 Hz to 44 kHz (DVD fs: 96 kHz)

S/N ratio ..... 115 dB

Dynamic range ..... 102 dB

Total harmonic distortion ..... 0.002 %

Wow and flutter ..... Limit of measurement (±0.001% W. PEAK) or lower

Digital output

Optical digital output ..... Optical digital jack

Coaxial digital output ..... RCA jack

Other terminals

CONTROL IN ..... Minijack (3.5 ø)

Accessories

Audio cord 1

Video cord 1

Power cord 1

Remote control unit 1

AA (R6P) dry cell batteries 2

Operating instructions 1

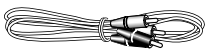
Note

The specifications and design of this product are subject to change without notice, due to improvement.

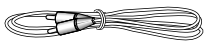
Accessories

Please confirm that the following were received with the player.

Audio cord (VDE1054)



Video cord (VDE1055)

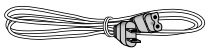


Power cord

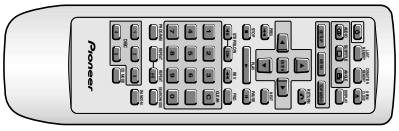
(plug varies with the country/region, so may not match the illustration)

(KUXQ, KCXQ Types : ADG7022)

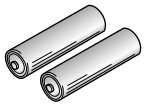
(RDXQ1/RA, RDXQ/RD Types : ADG1158)



Remote control unit (VXX2705)



AA (R6P) dry cell batteries



Operating instructions